MODERN LITHOGRAPHY

NOVEMBER • 1940 • VOL. 8 • NO. 11

PUBLIC LIBRARY
NOV 30 1940
DETROIT

Permanent Cerulean Blue 433P

Senelith Inks

were the first lithographic inks

made from dyestuffs

treated with sodium tungstate

for better sunfastness

and are still leading

with their outstanding resistance properties

The Senefelder Company, Inc.

"Everything for Lithography"

32-34 Greene Street **New York, N. Y.**

Show-through is a disappointment on jobs to be mailed, too!

SHOW-THROUGH ISN'T FUNNY—on a direct-mail job. It can blur the illustrations, muddy the text, kill the effectiveness of the best-planned piece. And it can kill a lot of customer goodwill, too.

Play safe. Print your to-be-mailed jobs on Hammermill Opaque. This paper is light in weight, but it has the opacity of much heavier stock. Whether the piece calls for linework, halftones or solids, you get the greatest possible freedom from "show-through."

And because it is light in weight, Hammermill Opaque cuts mailing costs for your customer. Show him that he can use these savings in postage to get better artwork, an extra color . . . at no extra cost. And ring up a bigger profit for yourself from the additional work that runs over your equipment.

You can depend on Hammermill Opaque for fast, trouble-free shop performance. It prints well by letterpress or offset. Its brilliant white gives a lift and sparkle to halftone and color work. Type is sharp, clean, inviting to read.

See for yourself that Hammermill Opaque is whiter, brighter, more opaque. Mail coupon below for a collection of Commercial Specimens on Hammermill Opaque and a handy sample book containing complete stock information.

For extra profit, print these jobs on Hammermill Opaque

1. Envelope Enclosures
2. Self Mailers
3. Accordion Folders ☆
4. Booklets
5. Legal Forms
6. Illustrated Letters
7. Package Inserts
8. Labels ☆
9. Time Tables
10. Maps

And scores of other similar jobs

HAMMERMILL OPAQUE

MADE BY THE MAKERS OF HAMMERMILL BOND

Send for it! Hammermill Paper Company, Erie, Pa.
Please send me Commercial Specimens and Sample Book of Hammermill Opaque

Name_____

Position_____

(Please attach to your *business* letterhead) ML-NO

SENEFELDER

LITHOGRAPHIC SUPPLIES

Everything to make the job easier

Each month we will briefly describe an outstanding item in the Senefelder group of supplies for the lithographer.

SENEFIX SOLUTION

One of the most vexing problems met with on every lithographing press at one time or another is "roller stripping." It manifests itself with streaks or blind spots on the ink distributing rollers or steel riders while the press is in operation. If not remedied immediately it is apt to spoil the entire job on the press.

"Roller stripping" is caused by free acid or uncontrolled chemicals which react on the surface of the steel riders while the press is running. This reaction oxidizes portions of the steel riders and prevents them from accepting ink freely and conveying it uniformly onto the lithographic plate.

Whatever the cause of the trouble may be, Senefix Solution will remedy it. Senefix Solution applied to blind spots on the steel riders reduces loss of production to a minimum; the steel riders can be reconditioned in the press without having to be taken out.

Senefix Solution eliminates the messy use of pumice powder or metal polish and oleic acid; it rubs out blind spots in one operation and causes the riders to re-accept the ink uniformly. Senefix Solution restores the primary function of the steel riders which is to distribute the ink uniformly onto the lithographic plate; it banishes all worry about "roller stripping" and "split fountain trouble."

Write for leaflet No. 188 describing characteristics of Senefix Solution, directions for use and prices.

The Senefelder Company, Inc.

"Everything for Lithography"

32-34 GREENE ST. NEW YORK, N. Y.

Absorbent Cotton
Acids, Litho
Acid Brushes
Alum Powder
Aluminum Plates
Antifin Rubber Preserver
Asphaltum Liquid
Asphaltum Powder
Berlin Paper
Bronze Powders
Bronzing Pads
Carborundum Powder
Caustic Soda
Cellulose Cleaning Paper
Charcoal Sticks
Chemicals, Litho
China Marbles
Cold Top Enamel
Collodion Emulsion
Columbia Paper
Copierlack
Cornelin Solution
Correction Slips
Counter Etch "Convenient"
Crayon Holders
Crayon Ink
Crayon Pencils
Crayon Transfer Paper
Crayons, Litho
Deep Etch Supplies
Developing Ink
Double Etch Salt
Duralac Lacquer
Egg Albumen
Engrav. Needles
Engrav. Stones
Etches
Excelsior Paper
Felt Daubers
Film Filters
Flannel, Litho
Flint, Graining
Fly Cord
Fountain Etch
French Chalk
Gamburger Slips
Gelatine Foils
Glass Marbles
Glycerine
Graining Marbles
Graining Quartz
Gum Arabic
Hand Rollers
Hydroquinone
Impression Rubber Sheeting
India Paper
Ink Mullers
Ink Knives
Ink Slabs
Liquid Tusche
Litho Inks
Litho Stones
Lump Pumice
Magnesia Carb.
Maple Balls
Mica Powder
Moleskin
Molleton
Mutton Tallow
Negative Brushes
Negative Collodion
Negative Glass
Negative Varnish
Neg-O-Lac
Nitric Acid
Offset Blankets
Offset Inks
Offset Powder
Opaque
Palm Oil
Pens, Litho
pH Slide Comparators
Photographic Gelatine
Planium Etch Salt
Plates, Lithographic
Press Boards
Printing Inks
Process Glue
Process Oil
Proofing Inks
Pumice Powder
Quartz, Graining
Rolling-up Ink
Rosin Powder
Rubber Snake Slips
Rubbing Stones
Schumacher Slips
Scotch Hone
Scotch Slips
Scotch Tape
Scraper Leather
Scraperwood
Senebumen
Senelac Varnish
Sensitizers
Sharp Etch
Snake Slips
Soapstone
Sponges
Steel Balls
Steelclay Marbles
Stone Cement
Strecker Salt
Sulphur Flour
Tracing Blue
Tracing Paper
Transfer Ink
Transfer Papers
Transparency Solution
Tusche
Varnishes
Wire Brushes
Zinc Plates
Etc., Etc.

MODERN LITHOGRAPHY

LITHOGRAPHED IN THE INTERESTS OF LITHOGRAPHERS EVERYWHERE

THE COVER

LIFE advertises its advertisers' advertising at the point-of-sale—only one of many examples of how major media today rely on point-of-sale to increase the usefulness and efficiency of ALL advertising. See the Symposium on Point-of-Sale, page 20.

November, 1940
Volume 8 No. 11

ALL UNBEKNOWNST TO MOST LITHOGRAPHERS, an important meeting, so far as they are concerned, was held quietly in Chicago one day recently. We've seen but scant mention anywhere of just what went on at the meeting—in fact, with all due modesty, we think we can credit MODERN LITHOGRAPHY with a scoop in being the first to report its proceedings in full—but, believe us, it was packed with Sales Dynamite. See if you don't agree. (*Page 20*)

PROBABLY NO OTHER ARTICLE within the past year attracted such wide interest as did the story about the *Hartford Newsdaily* and its production problems, which appeared in our May number. On a par with this in clinical interest, if not in the same revolutionary category, is the story behind the scenes at Ronalds Offset Lithographers, Ltd., in Montreal, where the partly-offset *Life*-like Canadian periodical, "The New World," is published. (*Page 25*)

LIGHT WINES AND BEER ARE NO longer used in offset press water fountain solutions, so we are told. Well, what is? Do you know? (*Page 27*)

IF YOU FOLLOW A PROCEDURE IN making halftones whereby all the variables are brought under control, such a procedure being based on past experience and observations which have been correlated to provide the operator with both a check and a guide for the future, what have you done? You've pretty well *standardized* your halftone technique. Which is not a half-bad idea. (*Page 29*)

WHAT YOU WILL FIND IN THIS ISSUE

	Page
Editorials	19
A Symposium on Point-of-Sale *Conducted by Porter F. Leach*	20
Lithography and The New World *By Donald Nicholson*	25
Litho-Dopes *By R. J. McEachen and J. A. Beierwaltes*	27
Standardizing Half-Tone Technique *By Herbert P. Paschel*	29
Silk Screen *By J. I. Biegeleisen*	32
Coated Paper *By Don Nicholson, W. B. Wheelwright and C. W. Latham*	34
Technical News and Literature *By Kenneth W. Martin*	37
In and About the Trade	38
New Equipment and Bulletins	45
Lithographic Abstracts	57
Where to Buy	62
Classified Advertisements	63
Advertisers' Index	65
Tale Ends	66

MODERN LITHOGRAPHY
Reg. U. S. Pat. Office

GRANT A. DORLAND, *President;* IRA P. MACNAIR, *Vice-President;* WAYNE E. DORLAND, *Secretary-Treasurer.* RICHARD ROLEY, *Editor.* Published monthly on the 15th by The Photo-Lithographer, Inc., Publication Office, 3201 Arch St., Philadelphia, Pa. Advertising and Editorial Office, 254 W. 31st St., New York, N. Y. ADVERTISING RATES: Advertising rates made known on application. Closing date for copy—20th of the month previous to date of issue. SUBSCRIPTION RATES: $3.00 per year in the United States, $4.00 per year in Canada. Single copies, 30 cents. Entry as second class matter is pending at the Post Office at Philadelphia, Pa., under the Act of March 3, 1879.

The "HOW" of Offset...

a MUST for Every Printer

you MUST see this book

...it reveals in simplest detail, step by step, the way an offset job is handled in preparation for printing... and comparative costs. If you are in offset, you need these facts to help you cut your costs and boost your profits by simplifying your production. If you are not in offset, it will show you why certain jobs can be done economically *only* by offset... perhaps point the way to why you aren't getting your fair share of the available business. "Modern Offset" by ATF isn't for sale... but the information it contains is available to every printer for the asking. Make a date now... call, write or wire... your nearest ATF Branch or Dealer... and arrange to see it. Or, watch for early announcement of preview of ATF's complete Modern Offset Plant... at your nearest Branch Office, or Dealer. There'll be a copy of "Modern Offset by ATF" there for your inspection.

Phone or write these ATF men to show you "Modern Offset by ATF"

ATF also makes Type, Composing Room Saw, the famous Kelly Presses, Little Giant, non-offset Guns, Rubber Plate Machine

AMERICAN TYPE FOUNDERS

200 Elmora Avenue, Elizabeth, N. J. **OFFSET DIVISION** Branches & Dealers in Principal Cities

BOSTON
W. S. MARDER, *Manager*
M. A. AASGAARD
470 Atlantic Avenue • Liberty 8625

NEW YORK
FRANK W. SHOBER, *Manager*
A. E. EATON
R. W. WATT
104 East 25th St. • Gramercy 5-7160

PHILADELPHIA
H. S. FERGUSON, *Manager*
JOHN DIETERLE
13th & Cherry Streets • Locust 0470
JOHN FARNSWORTH *Agent*
5th & Market Streets • Market 1706

BALTIMORE
O. E. ZIMMER, *Manager*
D. D. MILLER
109 S. Hanover Street • Plaza 3092

BUFFALO, N. Y.
C. H. MUSTY, *Manager*
D. D. MILLER
327 Washington St. • Cleveland 1446

PITTSBURGH
R. G. BORTON, *Manager*
D. D. MILLER
405 Penn Avenue • Atlantic 9486

CLEVELAND
E. C. RAASCH, *Manager*
D. J. BURNS
1231 Superior Avenue • Main 1787

CINCINNATI
H. W. BRANSFORD, *Manager*
D. J. BURNS
6th & Sycamore Sts. • Cherry 2037

ATLANTA
E. A. FOWLER, *Manager*
D. D. MILLER
223 Nelson St., S.W. • Walnut 4285

CHICAGO
E. G. RYAN & COMPANY, *Agent*
J. F. FEIGHTNER
J. W. FEIGHTNER
DEWEY MIRO
A. J. SHICKMAN
HERBERT HANSON
JAMES FITZGIBBON
727 S. Dearborn St. • Harrison 0900

DETROIT
E. G. RYAN & COMPANY, *Agent*
JON ATCHISON
Fairbairn Hotel

GRAND RAPIDS
E. G. RYAN & COMPANY, *Agent*
H. K. PIERCE
557 Madison, S E

INDIANAPOLIS
E. G. RYAN & COMPANY, *Agent*
R. G. HEUSLEIN
11 South Meridian

IOWA CITY
E. G. RYAN & COMPANY, *Agent*
CLAYTON ELLIS
335 Sydney Avenue

KANSAS CITY
E. G. RYAN & COMPANY, *Agent*
HARRY A. BARNETT
200 West Ninth

OMAHA
E. G. RYAN & COMPANY. *Agent*
PHIL SCHWARTZ
203 South Tenth

ST. LOUIS
E. G. RYAN & COMPANY, *Agent*
L. F. SCOLES
4245 W. Pine Boulevard

WASHINGTON, D. C.
C. I. GRAY, *Manager*
1224 "H" St., N.W.
Metropolitan 4522

MINNEAPOLIS
H. W. DETLEF, *Manager*
421 Fourth Street, S. • Main 7301

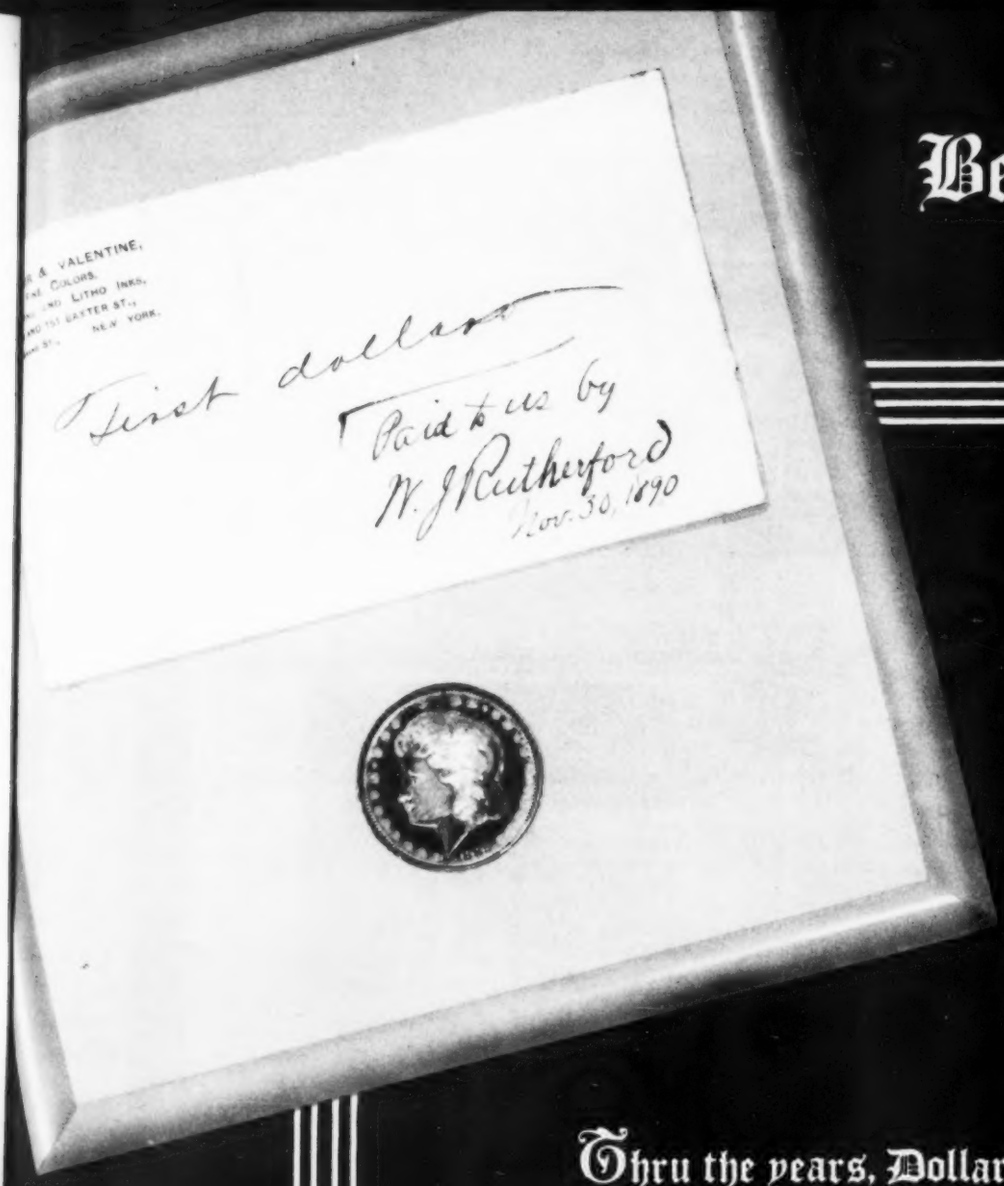
DENVER
E. D. DUNN, *Manager*
H. B. HICKS
1351 Stout Street • Keystone 7286

SAN FRANCISCO
H. F. FARNSWORTH, *Manager*
H. B. HICKS
500 Howard Street • Sutter 1950

SEATTLE
S. L. WATTS, *Manager*
H. B. HICKS
Western Ave. & Columbia
Main 0840

DALLAS
T. K. BRANSFORD, *Manager*
C. G. MANUEL
600 S. Akard Street • 2-8701-2

LOS ANGELES
B. C. BROYLES, *Manager*
H. B. HICKS
222 S. Los Angeles St. • Mutual 7371



Believe it or not!

You can come to our office and see the first dollar paid to us Fifty Years Ago.

Thru the years, Dollars and Sense have built this company from a small local firm to a national institution. Unending investment in research and improved facilities have resulted in thousands of satisfied customers from coast to coast. ¶ We thank our many friends for their support and pledge ourselves to continue to give the best we have thru the years to follow, as in the past Fifty.

Service from Coast to Coast

Sinclair and Valentine Co.

MAIN OFFICE AND FACTORY: 611 WEST 129th STREET, NEW YORK, N. Y.

Albany	Boston	Dallas	Jacksonville	Los Angeles	Nashville	Philadelphia
Baltimore	Chicago	Dayton	Kansas City	Manila	New Haven	San Francisco
Birmingham	Cleveland	Havana		Miami	New Orleans	Seattle

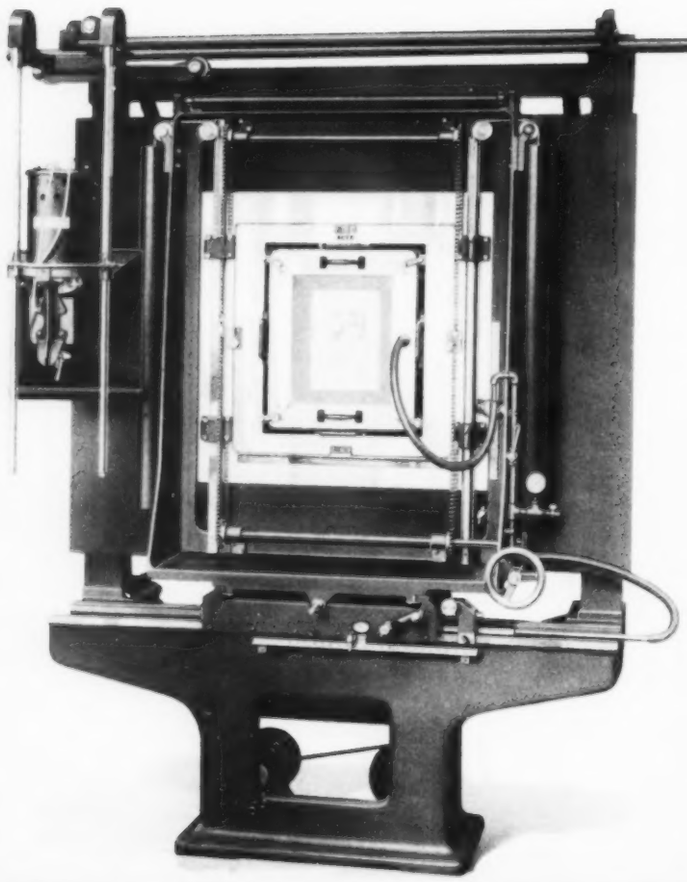
THE RUTHERFORD JUNIOR PHOTO COMPOSING MACHINE *Made in two standard sizes*

Type RMA for press plates up to 22½x30"

Type RMB for press plates up to 29x42"

•

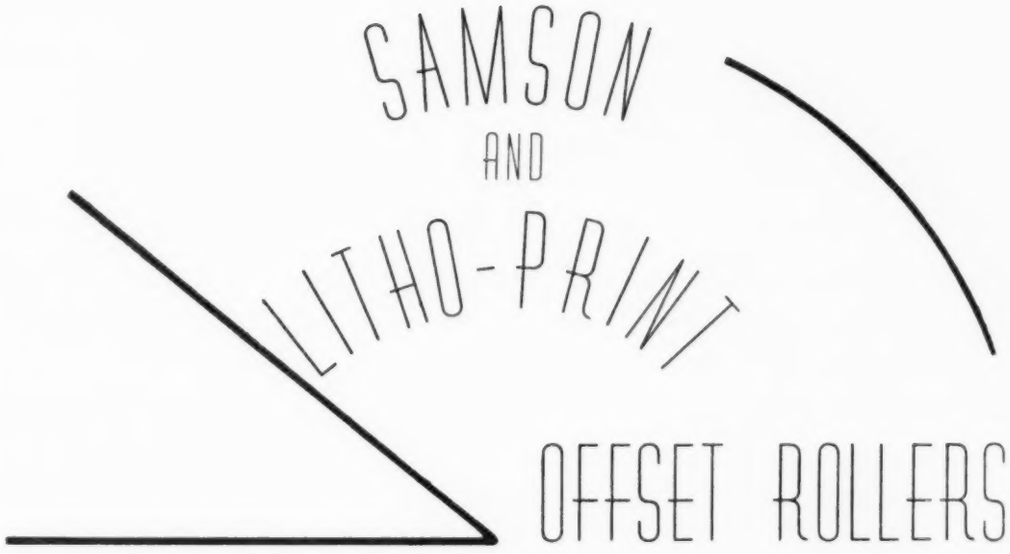
Send for descriptive folder. Other models available for plates up to 72"



RUTHERFORD MACHINERY CO.

DIVISION · GENERAL PRINTING INK CORPORATION

100 SIXTH AVENUE, NEW YORK · CHICAGO · SAN FRANCISCO · TORONTO · MONTREAL



BINGHAM'S SAMSON (VULCANIZED OIL) and LITHO-PRINT OFFSET ROLLERS combine highest quality with peak performance at prices no printer can afford to miss out on. BINGHAM PRICES are EFFICIENCY PRICES because mass production, modern methods and quantity distribution enable BINGHAM to provide MORE FOR LESS. And BINGHAM'S SIXTEEN strategically located PLANTS mean economy, speed and convenience to our customers.

CHICAGO

ATLANTA	KALAMAZOO
CLEVELAND	KANSAS CITY
DALLAS	MINNEAPOLIS
DES MOINES	NASHVILLE
DETROIT	OKLAHOMA CITY
HOUSTON	PITTSBURGH
INDIANAPOLIS	ST. LOUIS

SPRINGFIELD, OHIO

Also distributed by

California Ink Co. . . . San Francisco
Dry Climate Ink & Roller Co. . Denver
McKinley Litho Supply Co. . Cincinnati
Harrigan Roller Co. . . . . Baltimore
Dorsey Printers Supply Co. . Memphis

SAM'L BINGHAM'S SON MFG. CO.

Lithographers and Offset Printers:

THIS IS THE MACHINE YOU HAVE BEEN WAITING FOR!

MONOTYPE-HUEBNER

Universal Process Machine

Multiple Negatives and Positives — Plus

This is an entirely new equipment capable of producing the most precise results, which can be used in extremely wide range of operations by lithographers, offset printers and photo-engravers. The now celebrated Monotype notch-bar and micrometer method of positioning guarantees the most extreme accuracy.

The wide range of work includes copy preparation, making combination negatives and positives, multiple negatives and positives, photo-prints, combination proof plates and production press plates, etchings on metal, scribing register and center lines, and scribed lines in ruled forms in one or more colors on developed negatives, etc. May be used either inside or outside the darkroom as desired.

Every Operation Is Under Precise Control

COPY PREPARATION

Squaring copy, placing line-up and center marks.

Positioning cuts, type lines, figures, sketches, etc.

Making layouts on paper, metal, glass or film.

Checking individual negatives or entire layout.

CONTACT NEGATIVES and POSITIVES—DARKROOM WORK

Multiple positives or negatives on glass dry plates, film or paper.

Making combinations of labels or other forms.

Insets of various kinds for magazine advertisements, broadsides, folders, etc.

Locating and exposing overprints of designs or type lines of various kinds.

Making contact positives or negatives to full platen capacity.

Contact positive masks for color separation.

WORK ON METAL PLATES WITH ARC LAMPS

Offset proof plates on metal, single or combination, in perfect register.

Relief etchings on copper or zinc; single or combination, in perfect register for letterpress printing.

Production press plates for offset, gravure or direct printing; single images or combinations, in precise predetermined position. Step-and-repeat work.

SCRIBING DEVELOPED NEGATIVES

Register lines and center marks accurately placed on developed negatives.

Ruled borders, column rules, cut-off rules, boxes, etc., scribed as desired.

Rules scribed at right angles on forms of all sizes up to area capacity.

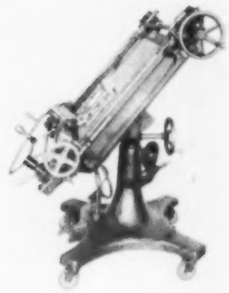
Ruled forms scribed in two or more sections with perfect joins at overlaps.

Ruled forms scribed for two or more colors on separate negatives in perfect register.

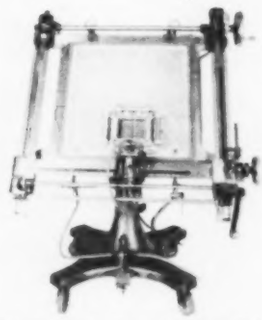
Full Information and Prices on Request

MADE IN TWO SIZES

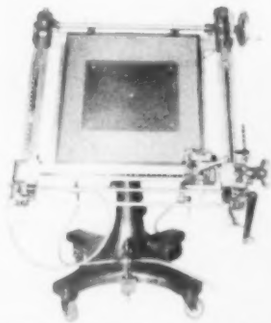
UPM2	30 x 30 in. Platen
UPM3	34 x 30 in. Platen



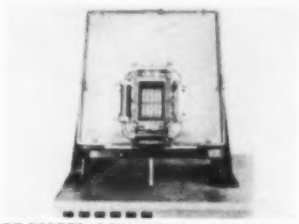
SIDE VIEW — Showing mechanism for raising, lowering and changing angle of platen; rubber-tire casters for easy movement into or out of darkroom.



FRONT VIEW — Shows Negative Holder in exposure position (lamp and hood not shown). Note notch-bars and micrometer screws for accurate positioning.



FRONT VIEW — Showing Dry Plate Holder in position to receive plate.



REGISTER DEVICE — For registering negatives in Holder before placing on Universal Process Machine for exposure.

LANSTON MONOTYPE MACHINE COMPANY, Philadelphia

MONOTYPE BUILDING, TWENTY-FOURTH AT LOCUST STREET

HARVEST

"As ye sow, so shall ye reap." This oft quoted biblical expression packs a volume of meaning in its seven words. Many successful lithographers today are reaping a bountiful harvest because they had the foresight and good judgment to standardize on

F&L

inks and supplies.

HARVEST YELLOW

BRIAR BROWN

THE FUCHS & LANG MFG. COMPANY

(ESTABLISHED 1870)

DIVISION · GENERAL PRINTING INK CORPORATION

100 SIXTH AVENUE · NEW YORK

BOSTON CHICAGO CINCINNATI CLEVELAND PHILADELPHIA ST. LOUIS
SAN FRANCISCO FORT WORTH LOS ANGELES TORONTO, CANADA

HARD-TEX

THE LEADER IN *Metal Decorating Inks*

HARD-TEX the most modern development in metal decorating inks, continues to maintain its supremacy because of these exceptional features:

HARD-TEX bakes very much harder in shorter oven time and at lower temperatures.

HARD-TEX due to its non-porous surface, makes it possible to reduce the amount of finishing varnish and still secure a lustrous finish.

HARD-TEX when properly baked, makes possible the flat stacking of sheets without danger of offsetting or sticking. Eliminates rehandling and spoilage due to scratching.

HARD-TEX adheres firmly when applied to plain or sized metal. A decided advantage where work is to be fabricated.

HARD-TEX has excellent adhesion on any type of coated surface, particularly on the modern coatings made up of synthetic resins. It binds with them to form a single substance.

HARD-TEX can in most cases be varnished direct from the press, over the wet print, thus eliminating an extra bake.

HARD-TEX will run exceptionally clean on the plate, showing no carry-over from one plate to another on the two-color press.

In addition to all of these advantages, HARD-TEX Inks retain the same excellent working properties which have characterized F. & L. inks for the past seventy years.

SEND FOR DESCRIPTIVE FOLDER

THE FUCHS & LANG MFG. COMPANY

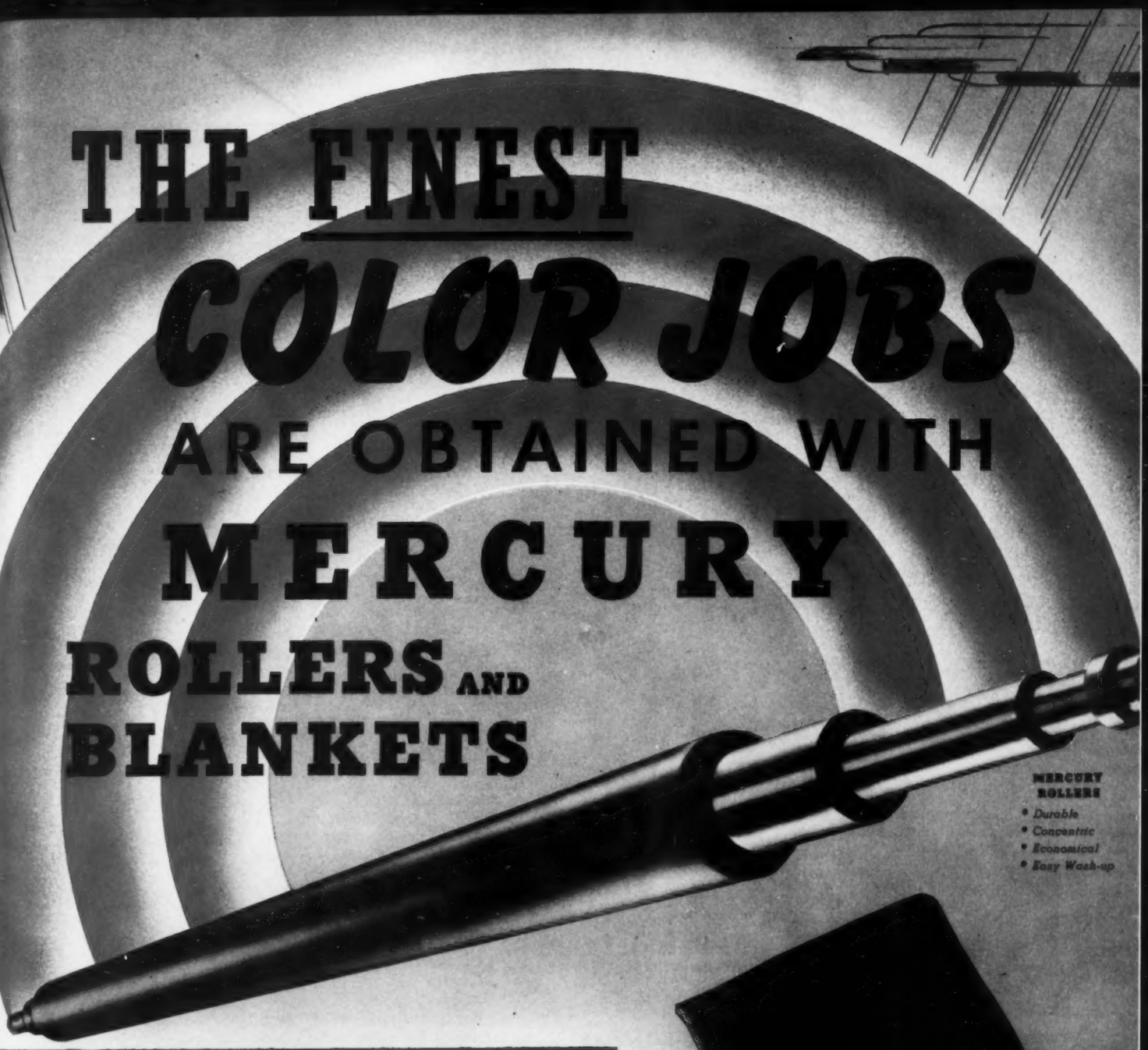
(ESTABLISHED 1870)

DIVISION - GENERAL PRINTING INK CORPORATION

100 SIXTH AVENUE · NEW YORK

Boston Chicago Cincinnati Cleveland Philadelphia St. Louis
San Francisco Fort Worth Los Angeles Toronto, Canada

THE FINEST COLOR JOBS ARE OBTAINED WITH MERCURY ROLLERS AND BLANKETS



MERCURY ROLLERS

- *Durable*
- *Concentric*
- *Economical*
- *Easy Wash-up*

MERCURY BLANKETS

- *No Powdering*
- *Oil Resistant surface and plies*
- *Smooth unblemished surface*
- *Great tensile strength*

BRING OUT the subtle hues and beautiful tints in the finest color jobs, will find Mercury Rollers and Blankets to be an important aid. Because surface is absolutely uniform, unblemished, and of just the right sistency—they help you to take full advantage of everything in your es. Because Mercury Rollers and Blankets resist ink absorption un- ly well, the problem of washup between colors is simplified. Perfect distribution is easier to obtain, since Mercury Rollers are accurately nd and concentric. Mercury Blankets combine great tensile strength safest mininum stretch. Make every customer a "repeater" by them the high quality which can be obtained with Mercury products.

RAPID ROLLER COMPANY

D. M. RAPPORT, *President* • FEDERAL AT 26th STREETS, CHICAGO

"Boss, the men in the shop have got up this petition asking you to take advantage of that combination offer and give 'em all a subscription to MODERN LITHOGRAPHY and a copy of the new LITHOGRAPHER'S MANUAL for Christmas."
"By cracky, those were my very thoughts, m'lad. Here, check this list with yours and get the orders off today. In the interests of good business—as well as Christmas—we can't neglect that combination offer, can we podner?"
M. FLEMING

YES SUH! An Ideal Christmas Gift

Give MODERN LITHOGRAPHY and THE LITHOGRAPHER'S MANUAL for Christmas.

Get MODERN LITHOGRAPHY and THE LITHOGRAPHER'S MANUAL for Christmas.

Give or get, by all means take advantage of this really outstanding offer for your friends or for yourself or both. By all the horned toads in Russia, this bargain really takes the prize. You get M. L., published monthly to keep you up-to-date (and a little bit ahead) on all that is worthwhile in the lithographic industry. You get the MANUAL, completely revised, written by experts, to tell just about all there is (for the present, at least) about selling, management and production. And you get 'em at a money-saving bargain. What more could anyone ask? Look over the plans on the lower right, then fill out the coupon on the lower left.

MODERN LITHOGRAPHY
254 West 31st St., New York, N. Y.

I would like to take advantage of your combination offer. Please send me the LITHOGRAPHER'S MANUAL and enter my subscription to MODERN LITHOGRAPHY as per the plan checked below. Enclosed is check (or money order) to cover in full. Foreign and Canada add $1.00 per year for each subscription and $1.00 for each MANUAL.

PLAN A ☐ PLAN B ☐ PLAN C ☐

NAME.....

COMPANY.....

ADDRESS.....

CITY..... COUNTRY.....

TYPE OF BUSINESS..... POSITION.....

PLAN A

$5.00 Lithographer's Manual
$3.00 One year's subscription

Total ~~$8.00~~
Combination offer $6.50. You save $1.50

PLAN B

$5.00 Lithographer's Manual
$6.00 Two year's subscription

Total ~~$11.00~~
Combination offer $7.50. You save $3.50

PLAN C

$ 5.00 Lithographer's Manual
$12.00 Four subscriptions

Total ~~$17.00~~
Combination offer $11.00. You save $6.00

Into every negative enters

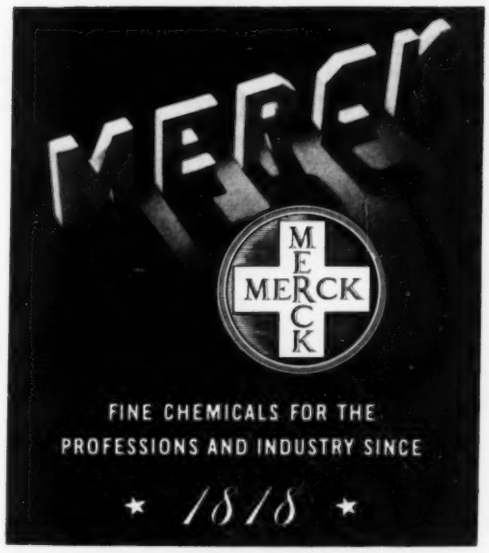
COPY

CRAFTSMANSHIP

CHEMICALS

To produce a finished negative of the better type, you need better copy, better craftsmanship and better chemicals.

Merck chemicals for the graphic arts are *better* chemicals—the kind that go a long way toward producing *better* results.

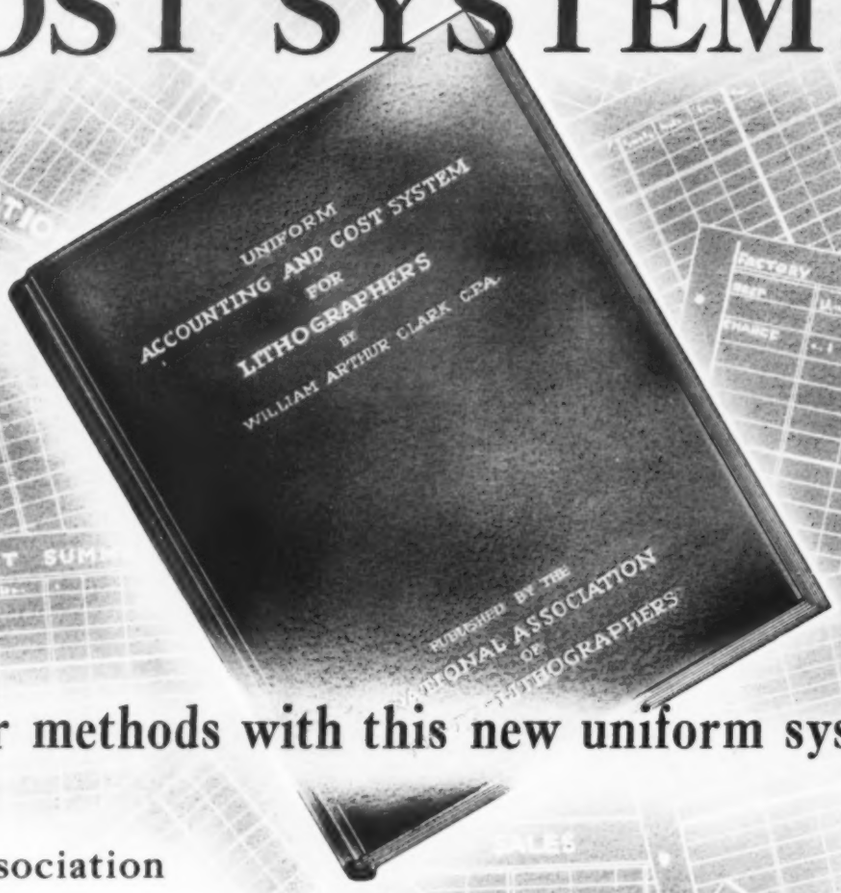


MERCK & CO. Inc. *Manufacturing Chemists* **RAHWAY, N. J.**

New York: 161 Sixth Ave., Philadelphia: 1649 N. Broad St., St. Louis: 4528 S. B'way. *In Canada:* Merck & Co. Ltd., Montreal and Toronto

If you are using an "improvised"

COST SYSTEM...



Streamline your methods with this new uniform system

THE National Association of Photo-Lithographers has just published a concise practical accounting procedure, complete with forms, designed for easy installation by any competent bookkeeper.

The contents include cost centers, an explanation of the forms, daily work, monthly work, preparation of departmental hour cost and production, schedule of fixed charges.

Also included are eighteen full size forms, prepared for your use as original copy on your own camera.

NATIONAL ASSOCIATION OF PHOTO-LITHOGRAPHERS
1776 BROADWAY, NEW YORK, N. Y.

Please mail me one complete set of forms and explanatory text, "UNIFORM ACCOUNTING AND COST SYSTEM," now ready for distribution.

☐ We enclose check for $10.00

☐ You may bill us for $10.00

(An extra set of unbound forms, ready for your camera, will be included for cash with order.)

FIRM NAME.....

ADDRESS.....

INDIVIDUAL.....

"Miss Tritterby, if that profits curve goes any lower, we'll strike oil. Our distribution rollers are chipping badly. Our production efficiency is too low. We aren't making money."
PROFITS
"Mr. Smithers, let's leave the oil business to Clark Gable and Spencer Tracy. Lithography is romantic enough for me. Get ROBERTS & PORTER SMOOTH LEATHER DISTRIBUTION and INTERMEDIATE ROLLERS. They never chip and they last for years."
SO LONG

Take a Tip from Tritterby

LIKE Helen of Troy, Miss Tritterby has been around. She knows the answers. Yet, wily female that she is, she has nothing on hundreds of lithographers.

They, too, have found the perfect answer to increased production efficiency and lower maintenance costs. They, too, have found a lasting solution to that irritating and expensive drag on production—roller chipping. ROBERTS & PORTER SMOOTH LEATHER DISTRIBUTION and INTERMEDIATE ROLLERS is their answer. They do not chip. They last for years . . .

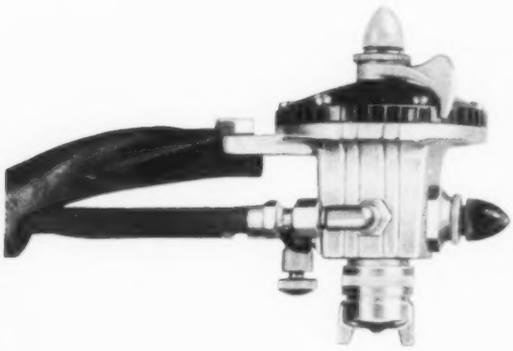
Why don't you take a tip from Tritterby and send us a set of your rollers for re-covering today? R. & P. leather covered rollers will steer your profits curve upwards by stepping up production efficiency . . . They spell profits!

ROBERTS & PORTER

INCORPORATED

New York: 100 Lafayette St. Phone: CAnal 6-1646
Chicago: 402 S. Market St. Phone: WABash 6935

Protection



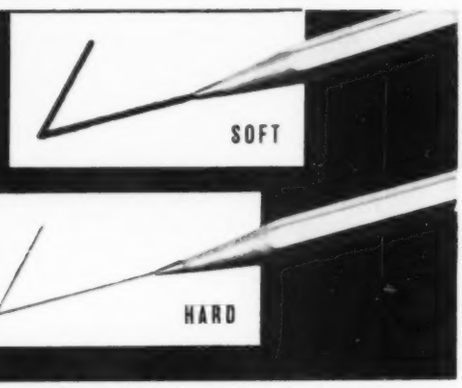
Just as U. S. war planes overhead are a symbol of protection...so is the new ATF Diafram Gun a symbol of protection to printers everywhere against offsetting and high production costs! Thousands of owners of ATF Guns are getting clean salable sheets all day, every day! Their ATF Guns have eliminated costly slip-sheeting, racking and slowing-down of presses...for both Offset and Letterpress. The New ATF Diafram Gun is all-air operated and is now selling at the lowest prices in ATF history. Don't let another day go by without finding out how the ATF Gun can protect you! Ask your ATF Salesman for details and new low prices TODAY!

ATF

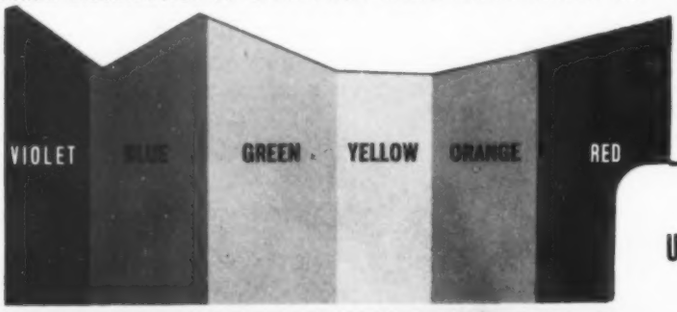
AMERICAN TYPE FOUNDERS

200 ELMORA AVENUE, ELIZABETH, NEW JERSEY • *Branches in Twenty-three Principal Cities*

Adaptability



COLOR DISTRIBUTION OF LIGHT FROM WHITE FLAME CARBON ARC



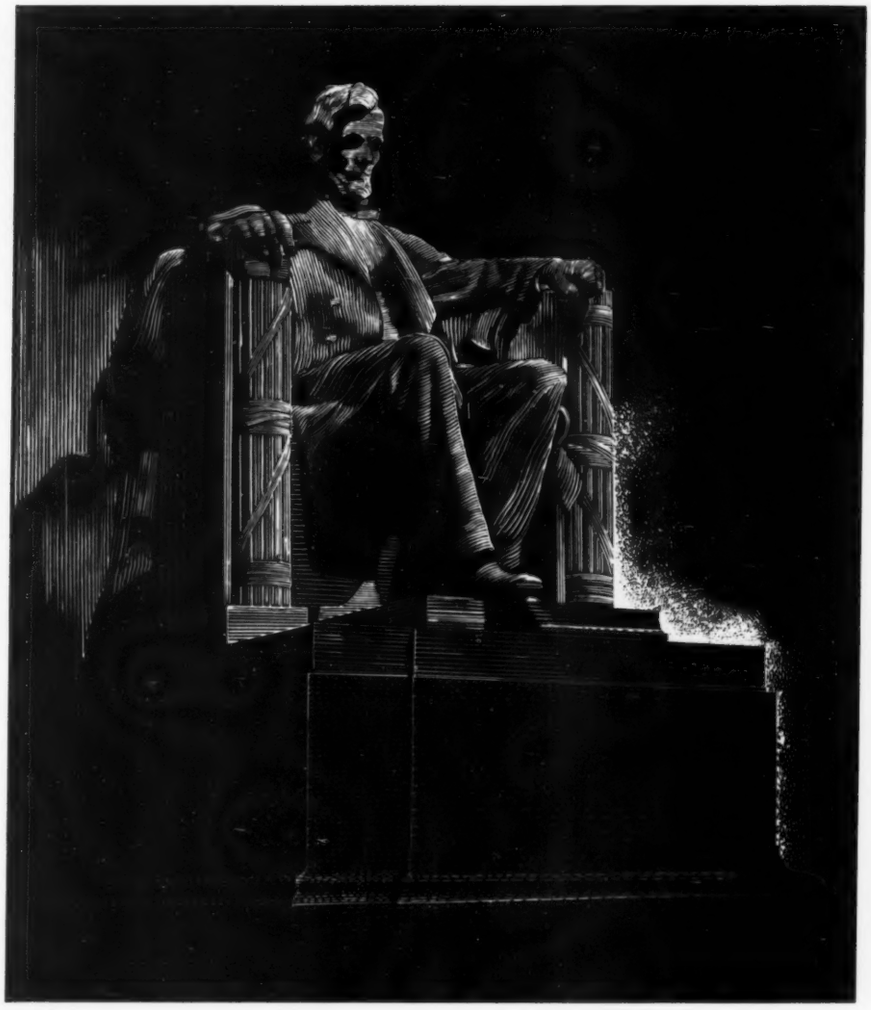
● Just as the artist's pencils are adapted to his craftsmanship, so is the light from "National" Photographic Carbons adapted to the craftsmanship of the lithographer. Its high actinic power gives it exceptional photographic speed. Its even balance of all the spectral colors simplifies the problems of *natural* color reproduction as well as those of realistic reproduction in monochome.

USE NATIONAL TRADE-MARK PHOTOGRAPHIC CARBONS

NATIONAL CARBON COMPANY, INC.

UCC

Unit of Union Carbide and Carbon Corporation
CARBON SALES DIVISION, CLEVELAND, OHIO
General Offices: 30 East 42nd Street, New York, N. Y.
Branch Sales Offices
New York Pittsburgh Chicago St. Louis San Francisco



Let's be honest with ourselves

Quality, production and **economy** are the three things which you rightfully expect from the supplies you buy. You are vitally interested in the products which can qualify with these requirements. Each year your needs change, and so must our rollers and other pressroom supplies, if you are to be fully satisfied.

Your decision to buy a certain type of equipment is based on your judgment as to whether or not we are fulfilling our part of the bargain. Your patronage is proof of your honest appraisal of us and of our products.

We are being honest with ourselves when we recognize that you, as a buyer, are entitled to the best dollar-for-dollar value on the market today. We maintain that you should receive the very best in performance and value that we can possibly offer.

Our organization has been devoted to the building of printing rollers to serve the graphic arts industry. Years of research and manufacturing experience are back of all Ideal products. Added to the wonderful performance these rollers have maintained in actual service, we are prompted to say, without reservation, that you cannot buy better equipment than Ideal.

Facts, figures and conclusive proofs of all claims we make can be presented upon request.

IDEAL ROLLER & MANUFACTURING CO.

CHICAGO, ILLINOIS *Branch sales offices located in principal cities* LONG ISLAND CITY, N.Y.

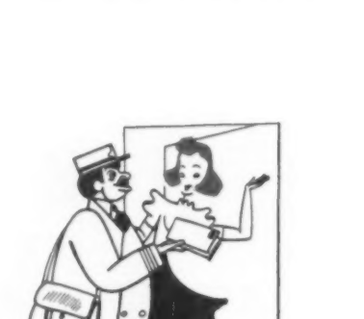
Canadian Agents, Sinclair & Valentine Company of Canada, Ltd., Toronto

"This guy'll be hard to crack—he's a stickler for *Permanized Papers.*"

1.

"Oh boy, it's *Permanized!*"

2.



"I always did say, the *Permanized* way is the safe way."

3.

*"Permanized Papers'*ll get you there, too."

4.

Permanized
PLOVER LINEN BOND
OLD RELIABLE BOND
INTERNATIONAL BOND
ARTESIAN BOND
SYSTEMS BOND
REDEMPTION BOND
MAJOR BOND
OPAQUE BOND

WHITING-PLOVER PAPER COMPANY
STEVENS POINT, WISCONSIN
Exclusive manufacturers of
Permanized RAG-CONTENT
BOND - LEDGER - THIN *Papers*
NEW YORK OFFICE & WAREHOUSE: 71-73 MURRAY ST.
Looking for the information that will give you a sharp insight on the real secrets of making quality Rag Content Bonds and Ledgers? Write for a copy of the booklet that unfolds a brand new concept of the proper way to give the customer what he wants in paper. Ask for a copy of—"BALANCE - PAPER'S INTANGIBLE INGREDIENT."

Permanized
OLD RELIABLE LEDGER
ARTESIAN LEDGER
SYSTEMS LEDGER
AMITY LEDGER
★ ★ ★
PLOVER ONION SKIN
LAWYER'S ONION SKIN
AMITY ONION SKIN

EDITORIALS

WE were reminded once more of the careless methods followed by some of the smaller members of the industry in picking their sales staffs when we heard recently of a series of accounts turned over for collection. It was the old story of adding a new man to the staff without investigating his background carefully enough. Sure, he made lots of sales,—and collected all his commissions, of course. But collecting from the accounts proved to be another and more difficult matter. It developed later that this same man had victimized other lithographers by the same tactics previously, and will probably be working the same racket on some one else a year from now.

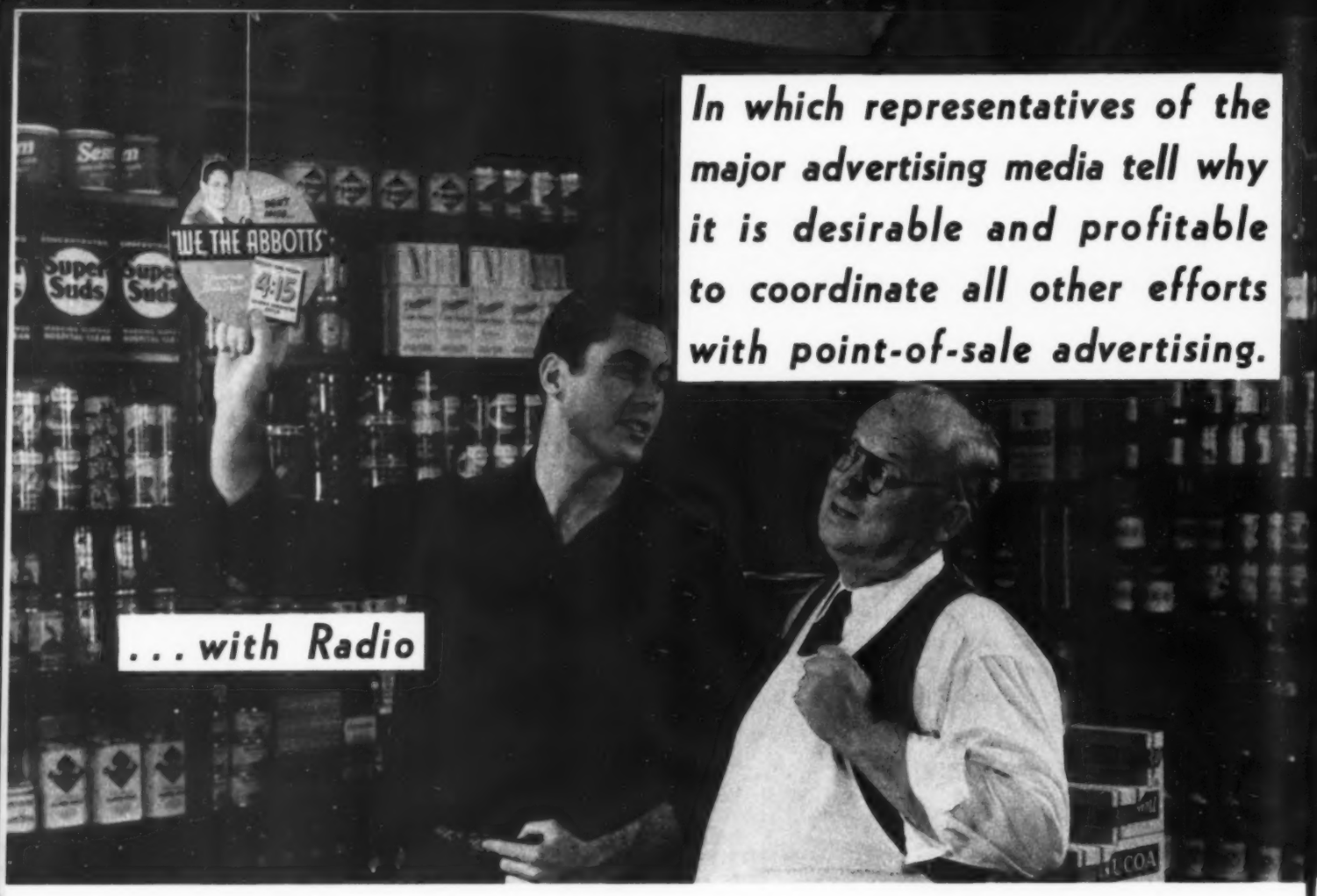
This problem all works itself back to the necessity of finding out more about members of your sales staff before they go on the payroll. A man who has worked for several of your competitors may not turn out to be quite the bargain he seems, and the only way to find out about him is to check his record carefully with these previous employers. As a matter of fact many lithographers have fairly well established policies of not hiring salesmen who have worked for other concerns in the same field. They recognize that it sometimes leads to bad feeling.

WHAT would you do if you went into a store and asked to see some skis and the clerk replied, "We don't carry skis, but we have some very nice snow gliders," and then brought out a pair of skis? Either you'd think he was trying to be funny, or was just plain stupid or crazy.

That's pretty much the way it is with the buyer of lithography nowadays, a well-known advertising executive told a meeting at the "Living Lithography" exhibition in Philadelphia last month. He goes shopping for what he thinks is lithography. But no, he is told that what he wants is offset printing, or planography, or optak, or photo-lithography, or any one of a dozen other trade name processes with fancy titles. The fact that they are also lithography is not mentioned.

"Various lithographic production methods," the speaker said, "have produced a general confusion. Many buyers of lithographic processes have no appreciation of the fact that they are buying lithography." And he added, "both buyers and sellers of lithography are definitely handicapped by the confusion. The important thing," he continued, "is that prospects be sold on the broad concept of an industry." And finally, "I think that the sellers of lithography should attempt to break down the limited concept that most people have. Production processes have unquestionably developed more rapidly than has the sales technique, with the result that many jobs that rightfully should be lithographed are now produced by other processes because the buyer is uninformed."

WE see where Clare Boothe, glamourous playwright wife of Henry Luce, Timecoon publisher, told a meeting at the New York Advertising Club recently that the chief function of advertising was to "spread sunshine." We had never thought of it in that way. Somewhere we picked up the apparently erroneous notion that advertising was intended to move merchandise, sell a product or an organization. It does provide a novel sales approach for the lithographic salesman, though. Instead of sticking his head in the buyer's door and pulling that old wheeze about anyone wanting some nice, fresh lithography today—which is beginning to lose its punch anyway—he can now safely stand outside and sing "Keep Your Sunny Side Up," or that old hymn which begins "Brighten the Corner Where You Are." That should make a hit.


In which representatives of the major advertising media tell why it is desirable and profitable to coordinate all other efforts with point-of-sale advertising.
"WE THE ABBOTTS"
4:15
Super Suds
Super Suds
. . . with Radio

A Symposium on Point-of-Sale

Conducted by Porter F. Leach

Merchandising and Advertising Consultant

STREAMLINED promotion and intense competition among advertising media for the advertiser's dollar has made it imperative that the newspaper, the magazine, radio and outdoor help merchandise their client's products at the point-of-sale. This step has been recognized among the leaders of the major media for some time as a basic concept of advertising practice. In other words, the newspaper publisher has realized that he must do something for the advertiser besides running his advertisement.

Recently in Chicago a symposium on point-of-sale advertising, sponsored by the National Food Distributors Association and conducted by Porter F. Leach, merchandising and advertising consultant to the N. F. D. A., was held on this very subject. It was a meeting of tremendous interest for the display lithographer. Porter Leach, who thought up the whole idea, told a group of representatives from the major media, as well as salesmen from the National Food Distributors Association, that "even the experienced advertising man who knows everything about point-of-sale advertising and how to coordinate it best with the major media will admit that it is an excellent idea to review his knowledge periodically."

"Not long ago the N. F. D. A. made a national survey and asked advertising space buyers a few pointed questions," continued Mr. Leach. "We got some astounding facts. They made us realize that as an association, the N. F. D. A has done a most unsatisfactory job of letting the manufacturer and the advertising man know what this 'food distributor' business is all about.

"Inasmuch as actual sales results are the common denominator for both the advertiser, (the man who pays the bills) and the advertising executive, (the man who spends the money)," he said, "we decided to start at the point which is, or at least should be, most important to every advertiser—and to every advertising man—The Point-of-Sale. *First:* perhaps selfishly so, because the food distributor has long been one of the pioneers in the use of lithographed and printed point-of-sale advertising which ties in with the major advertising

media efforts; *Second:* because every advertiser selling to the public through retail outlets, knows that this is the place where he has his last chance to sell the consumer.

"A most important part of every distributor-salesman's training," declared Mr. Leach, "is the efficient use of door, window, counter, wall and floor displays in the retail store, as well as the timely use of store-door-demonstrations, massed floor displays and related item selling. Close tie-up of the food distributors' merchandising efforts with the advertising placed locally by the manufacturer is sure to result in a larger volume of sales per advertising dollar expended on products.

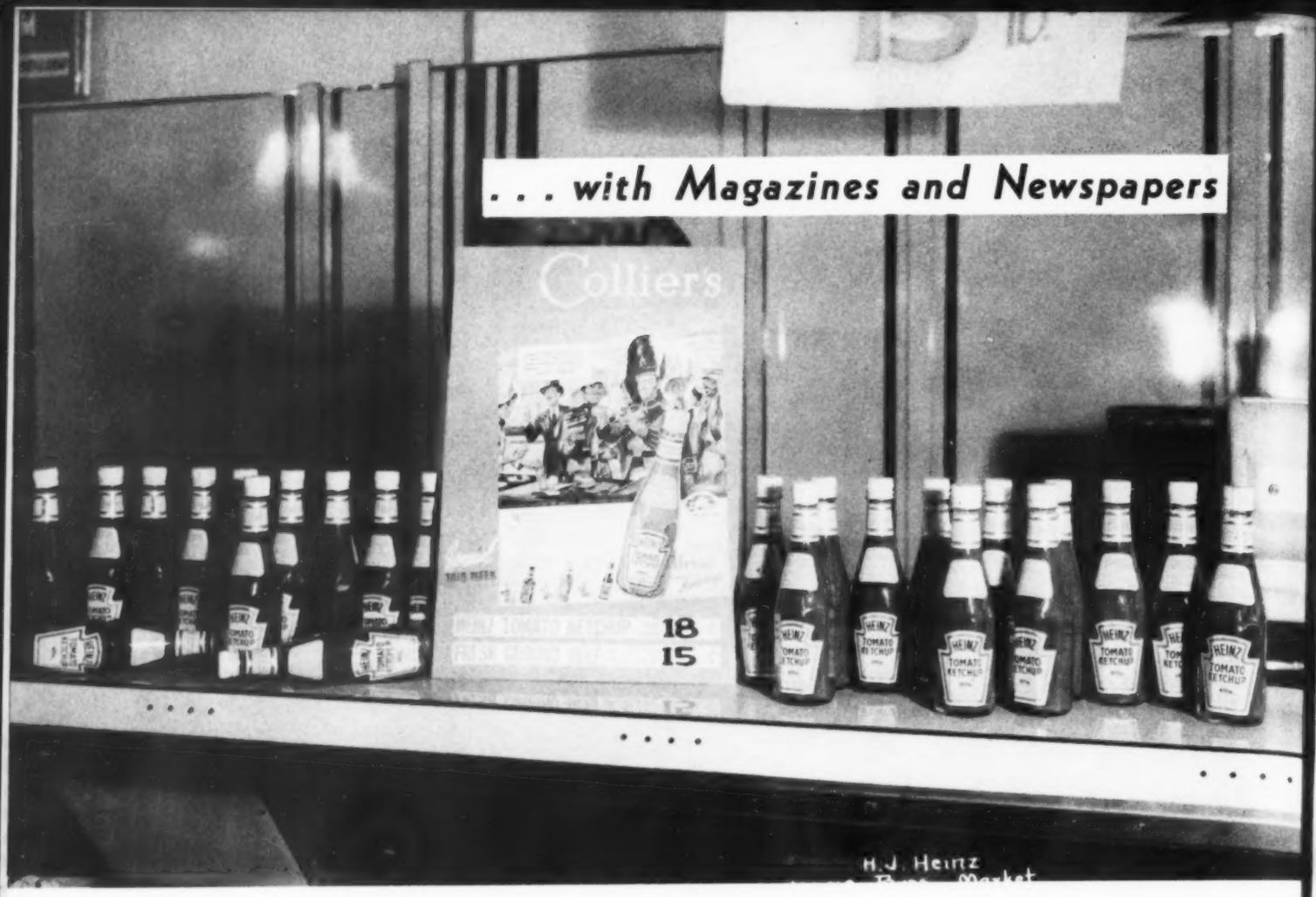
"*Today's competition*," he said, "*demands that even advertising campaigns must be merchandised*, not merely the product. There is no dearth of advertising. The big job to be accomplished today is the securing of coordination between the man, and his tools, who buys advertising, and the man, and his tools, who is responsible for actual sales. This means not merely the manufacturer's salesmen, but the manufacturer's distributors and retailers also must be sold on the campaign. Point-of-sale advertising must therefore be looked upon from the viewpoint of retailers and their customers, and not merely from the viewpoint of the advertising department's creative personnel.

"At this session between advertising men and food distributors I believe it will be mutually agreed that there has been, and still is, much waste in advertising because the viewpoints of the distributor, retailer and consumer are too often ignored before the campaign is actually prepared and put into operation in the various media employed by the advertiser," Mr. Leach pointed out. "I am therefore going to turn this meeting over to the representatives of the four major media,—magazines, newspapers, outdoor advertising and radio. Each one of the representatives of the media is exceptionally qualified to talk on the subject, and I am sure will give some excellent and workable examples of coordinating national, local and point-of-sale advertising, which will enable the advertiser to get more and better results."

Following his brief explanatory remarks Mr. Leach then introduced the following speakers: Fred J. Maxted, Crowell-Collier Publishing Co., representing magazines; Frederick Dickinson, Bureau of Advertising, A. N. P. A., representing newspapers; Emmons C. Carlson, promotional manager, National Broadcasting Co., representing radio; E. W. Stephenson, sales manager, General Outdoor Advertising Co., representing outdoor; Sam Good, Good Brothers, Inc., Food Distributors, representing the distributor; and G. D. Crain, Jr., publisher and president, *Advertising Age*, who summarized their remarks.

Fred. J. Maxted, Crowell-Collier Publishing Company, New York . . . Magazines

Naturally, our organization is interested in point-of-purchase advertising, for it is in our best interests to



see that the advertising of our advertisers is merchandised. To do that, point-of-purchase advertising, such as lithographed displays, reprints, counter stands, pennants, etc., by cooperating with local and national advertising, provides the most effective means. In fact, our organization has sixteen men who do nothing all day long but call on dealers in twenty-one cities for the purpose of merchandising our advertisers' advertising. Naturally, it is imperative that our men find something unusual with which to interest dealers, sales representatives and jobbers in our promotional efforts. That something unusual usually is provided for by point-of-purchase advertising.

Too much point-of-purchase advertising material produced by manufacturers comes from men sitting at a desk, but a salesman must first be sold on display material and believe that it is workable or he has no use for it. Therefore, when we turn out a piece of lithographed display material, we test it before sending it out. Our men serve as demonstration agents. They report to us what the dealer wants in the way of displays and we are guided by their counsel rather than by the wishes of the manufacturer. In doing that we feel we are producing the most profitable display from his standpoint.

Here is an instance of how we tie in point-of-sale advertising with the advertising of our advertisers appearing in our publications. Suppose, for example, that it is a cereal. Everyone knows that cereals are low-profit items. Therefore, we suggest a lithographed display with, say, fruit juice, tomato juice and coffee displayed with the cereal, letting the dealer, of course, decide which fruit juice and which coffee he wishes to feature. By cooperating with the dealer in this manner, we have found that such a display as that just mentioned, for example, makes the dealer happy because his fruit juice and coffee sales are increased along with the cereal we are promoting.

Another recent example of how magazine advertising ties in with point-of-purchase advertising, and effectively too, was shown by a recent experience in Cleveland. We designed a display for Kraft's Mayonnaise. We placed it in a small independent store in Cleveland. The mayonnaise was in competition with Miracle Whip, so we designed a display which combined Kraft's Mayonnaise, Knox Gelatine and the grocer's favorite brand of canned asparagus. All of these items tied up with one of our magazine advertisements featuring a salad composed of these items. We took an inventory a week before the display was up and then one during the display and one the week following. During the week the display was shown, the sale of mayonnaise increased 600%, the gelatine 267% and the asparagus 250%. There, certainly, is evidence of the effectiveness of point-of-purchase advertising material coordinated with magazine advertising.

There are numerous other examples of similar tie-ups using lithographed point-of-purchase advertising material or lithographed reprints, counter cards, etc., which could be cited. For example, a combination display of ground beef with Heinz Catsup boosted Heinz

Catsup sales 111% and the beef 28%. A combination Libbey's tomato juice display with crackers boosted the tomato juice sales 161% and the crackers 45%. A combination display of Borden's Chateau Cheese with None-Such Mince Meat boosted Borden's cheese sales 92% and the mince meat sales 133%. All of these point-of-purchase displays were tied in with magazine advertising.

Among the types of point-of-purchase advertising which in our experience has proved effective in promoting the products manufactured by our advertisers has been the dump display. Pyramid displays may be attractive, but the consumer does not like to take one from the display for fear of disarranging the entire pack. We made a test of these dump displays recently and found that, as a result of their appeal, unplanned and impulse sales ran as high as 53%. When the average woman was asked why she purchased these unplanned items, her reply invariably was, "The display reminded me that I needed it," or "The packages were in a basket and I just picked them up," or "The display card gave me a new recipe."

Frederick Dickinson, western manager of American Newspaper Publishers Association . . . Newspapers

The nature of all point-of-purchase advertising is influenced by the nature of the advertising media with which it is tied in. Since, therefore, the newspaper supplies fresh news, all point-of-purchase advertising to promote the advertising of newspaper advertisers should, logically enough, be timely, fresh and up-to-the-minute. In other words, the advertising copy appearing on the point-of-purchase material should be handled as news, since it and the medium with which it is linked are news. From the newspapers come basic materials for use in point-of-purchase advertising.

I believe that point-of-purchase advertising makes an advertising dollar go further. For the average consumer is like the average voter. It is not enough to hand him his ballot. You have to lead him to the polls and shove him into the voting booth. In addition,

PORTER F. LEACH

". . . we believe that there are enough concrete examples of how and why point-of-sale advertising can be effectively and economically used to satisfy almost any advertising man."

it's not a bad idea to give him a last-minute suggestion as to how he should mark his ballot. Netted down, point-of-purchase merchandising makes it easier and pleasanter for the merchant to sell and for the customer to buy, as well as improving the efficiency of the advertising medium with which it is co-ordinated.

For example, two of our men recently worked with dealer salesmen in a particular territory placing displays, helping the dealer to merchandise, etc., with the result that in that area in nine days distribution increased from 33% to 52%. To bring this increase about, displays were built in 189 outlets and over 8,000 pieces of point-of-sale material, including lithographed counter cards, window strips, banners, etc., were distributed. There is no question but that point-of-purchase advertising assists the newspaper to assist its advertisers in launching a new product or increasing the sales of an old.

Emmons C. Carlson, National Broadcasting Company . . . Radio

The success of the radio medium depends upon the way it is merchandised to the dealer. The radio personality on a manufacturer's program becomes a well-liked and trusted friend to the average radio listener and consumer. When he recommends merchandise, therefore, the average consumer becomes a very good prospective buyer of that particular merchandise. However, unless the average consumer is reminded of his favorite radio personality at the point-of-sale through lithographed floor, window and counter displays, the radio personality's appeal is not used for all it is worth. For example, when consumers step into a store and are greeted by a lithographed display, such as that designed and distributed by the S. C. Johnson and Sons Company recently, in which Fibber McGee and Molly are shown riding a bicycle on the handle bars of which is a wire basket containing Johnson Wax Products, they are reminded of S. C. Johnson through the pleasant hours of amusement they have had listening to Fibber McGee and Molly.

Providing the radio personality is always top-notch, there is no surer way than this type of point-of-purchase advertising to put the consumer in a frame of mind to buy. The dealer is also impressed by point-of-purchase material which ties in with radio advertising. For instance, just recently the Campana Corporation prepared a special window display around "The First Nighter" program for which the dealer was charged $1.00. The response was overwhelming. The average consumer will listen with interest and attention to the sales story told by his favorite radio stars. Tie this appeal in with point-of-purchase displays and the results are greater sales and profits.

E. W. Stephenson, General Outdoor Advertising Company . . . Outdoor Advertising

The present-day merchandising policy of the outdoor advertising company clearly illustrates how point-of-sale advertising and outdoor advertising can be coordinated. For example, in Omaha, Nebraska, recently, the Metz Baking Company had decided to cancel their outdoor display, which was situated right in the heart of the town near numerous outlets for bread. When we asked why they were doing this they replied that they didn't think the outdoor display was increasing their sales. We then asked them if they had ever attempted to sell their dealers and

salesmen on the merits of this particular outdoor display. They replied that they had not and we told them that they were getting but half of the possible results from their outdoor advertising. On condition that they not cancel their outdoor advertising, we undertook to promote it among their distributors and dealers with the aid of window displays, counter cards, stickers, pennants and banners. In each case the point-of-purchase advertising was tied in with the company's outdoor display. At the end of the first month, the lowest increase in sales of bread in any one route was 12%. This instance is a very good proof of the necessity of merchandising your advertising.

Outdoor advertising perhaps has not as many problems as other media have, for, due to its nature, it merchandises itself. It is seen by the housewife as she leaves her home to shop and is many times the last thing she sees before she enters the grocery store. The dealer also sees it on the way to his store and it influences him in pushing the advertised product. But it is also, if 100% efficiency is to be obtained, necessary to merchandise outdoor advertising at the point-of-sale. There are many ways point-of-purchase advertising material can do this. An example which has proved effective is a display which is a reproduction of the poster itself.

In conducting an outdoor campaign it is vitally important to inform every single person who has anything to do with the sales results of the campaign, how it can best benefit him or her, and it is also vitally important that point-of-purchase material be placed at every step along the sales route so that the outdoor poster impression is not forgotten until it can be turned into a sale and ring the retailer's cash register.

Sam Good, Good Brothers, Philadelphia . . . The Distributor's Needs and Reactions Towards Point-of-Sale Advertising

The average food dealer considers himself extremely fortunate to be able to work with the merchandising men from other media, since he knows that to get the best results in his territory it is absolutely essential that he cooperate with a newspaper advertising program, a 24-sheet poster advertising program, a magazine advertising program or a radio program by tieing in at the point-of-purchase. We feel it is necessary in the selling of a food product that our men are sold on the advertising medium used. This can be accomplished by the use of point-of-purchase material and other merchandising aids worked out in cooperation with the representatives from the various media.

We try to make it a point to be present when a manufacturer lines up a program for advertising. We feel that it is extremely important to us that our men be given as much sales ammunition in the form of point-of-purchase advertising as possible, so that they can do their job properly. We feel that there should be a strong connecting link between the advertiser's advertising in all media and the consumer. This connecting link is supplied by point-of-purchase display material.

If there is no merchandising at the point-of-sale, the consumer may read the advertising, but there is no sure guarantee that he will buy the product. Point-of-purchase advertising does, however, supply that guarantee. We like to work with the advertiser as critics of display advertising. For example, one advertiser with whom we have worked closely has developed a display jury with which we are cooperating. The jury distributes display pieces in advance tests or sends out questionnaires on pieces used in the preceding year to find out what was wrong with them, so that the following year, if there were any mistakes, they can be avoided.

This jury has functioned so well that year after year we are getting display pieces to aid in our promotion which really sell more merchandise. Through the medium of a display jury we feel that better point-of-purchase advertising pieces are being produced. Instead of pieces with easels that stand for just a short time and then are tossed away, displays are now being produced which stand until they literally fold in two. These displays may not in the end contain the product that originally paid the bill for their production, but they do contain something that the grocer sells. A display may wind up with soap when it first advertised mayonnaise, but it still carries the original advertising copy.

One other thing we do which we feel effectively sells the retailer on the merits of point-of-sale advertising is this: Instead of going into his store and saying, we want to put up so many cases here, and we want to build up a nice display there that will help you sell four or five times the volume you have been doing, we show him an actual photograph of a type of display that has been tried out and used with success in other retail outlets. Then he can't come back at us and say, "That stuff won't sell in this location." We have proof that it will sell in a store of his type.

We believe that the average food distributor offers the best merchandising medium for any food manufacturer to promote his product through, since we are sold on point-of-purchase advertising and point-of-purchase advertising is the final clincher medium. There is no other medium so sure. Rest assured that the food distributor will do everything in his power to show the retailer how to tie in more effectively with the advertising that the advertiser furnishes at the point-of-sale. The food distributor's one main objective is to sell more merchandise at less cost through more intensive, intelligent and economical use of point-of-sale advertising.

G. D. Crain, Jr., publisher of *Advertising Age* . . . Summary

In summarizing the remarks of the representatives from the various advertising media and the representative from the Food Distributors' Association in describing how necessary it is to merchandise advertising through point-of-sale displays, I should like to emphasize the "mutual profit" of this for all concerned. Advertising does not accomplish its purpose unless the favorable impression which it has created has been converted into sales action in the retail store. Point-of-purchase promotion should do this. On the other hand, too much dependency must not be placed on point-of-sale advertising. It should not be overburdened. Point-of-sale advertising must be abetted by creative advertising in other media. Point-of-purchase advertising directed *only* toward the dealer and trade is lacking in effectiveness because it does not also cash in on established consumer acceptance.

LITHOGRAPHY *and*

THE NEW WORLD

*By Donald Nicholson**

"The New World" is the apt title of Canada's newest picture magazine, produced in part by offset. Mr. Nicholson, production manager for Ronalds Offset Lithographers, Ltd., of Montreal, who do the job tells how.

AS some of you know, we at Ronalds Offset Lithographers, in Montreal, produce the new lithographed magazine, "The New World." Undoubtedly you will be interested in hearing about some of the production details we follow in getting it out. The method that we use for preparing the copy for this is to have Vandyke prints made of the halftones, which have been previously scaled for size, and a paste-up made with these Vandykes with the galley proofs of the type.

These are submitted to the editorial department for corrections. The corrections are made and press proofs are pulled on blue-white coated stock with the type as near in place as possible. The sections where the halftones appear on these press proofs are cut out with a sharp knife and a line shot is made of this, placed against a black paper background in the copy frame. This gives a line negative with clear spaces where the halftones are to appear. Then the halftone negatives are stripped in place over these clear places so that a great deal of stripping time is eliminated. From these combined negatives a contact positive is made which is used in making the deep-etch plates with which we print this magazine.

A more recent method, and possibly better, would be to have the press proofs pulled on Transolene or Glassene paper with a Vandercook proving press; have contact positives made from the original halftones on thin-base film and strip these in place on the Transolene type proof with acetate. Another method which is sometimes used, which is fast but not quite so satisfactory, is to have continuous-tone prints made of illustrations shot down to the proper size and to paste these continuous-tone prints on the press proof, then to make a halftone shot and a line shot and double shoot the image on the press plate.

I have something which I think is a little different in the way of making halftones. First, I calibrate by lens, then I make a chart which will be fastened on the lens board above the lens, using the progression obtained by calibrating the lens to lay out the stops on the segment of a circle, so that I have all the individual stops and the half stops. If your camera man does not have the necessary mathematics for doing this, he might lay the lens face down on a sheet of paper, trace around it, and mark off the stops which are indicated on the lens barrel in their proper positions; then lay out a segment of a circle using the center of the lens as a center point, extending these stop lines to this segment and then visually divide the segment into single stops. This, of course, is a progression and the distances will not be equal but graduated. A pointer is then attached by a collar to the barrel so that the point of it follows along the markings on the lens chart. I then establish the stops that I am going to use for the same size, which happen to be F/19, F/27, F/39, F/90, and with a normal picture establish the times which would give me a correct halftone, using a grey scale as a check. After this test has been established I will use it for any reduction or any enlargement of normal copy.

I use the same progression that I obtain from calibrating the lens to lay out the progression of these stops, so that in shooting the halftones the only thing that varies is the stop opening for the various stops. For further correction of poor copy I add or subtract from 5 to 15 seconds from or to the high-light or detail stops, or the middle-tone stop to make a variation so as to bring the halftone to a normal gradation; that is, by decreasing the time in high-light I can darken the value of the picture in

*Abstracts of an address delivered before the 8th Annual Convention of the National Association of Photo-Lithographers, Chicago, Sept. 26-28.

case it has only dark grey in it and not black, and the same working at the other end of the scale by adding time. These tests I indicate on the grey scale which I use for comparison with the greys and whites in the pictures which are to be photographed. This gives me a visual but very satisfactory check and enables me to take a lot of mixed copy and get uniform results.

This same procedure may be followed fairly satisfactorily with color work, although I have not worked with it long enough to be completely satisfied with the results, as it will require a couple of years of data accumulated before I can do it as accurately as I can with black and white copy. The procedure I follow is to trace my sketch and then use a color book showing all possible combinations of four process colors, which I use to check the various patches of color on the sketch. These figures I then use as a basis for figuring my gradation of color, and by using a color scale similar to a grey scale, I make the necessary corrections in figuring my time from normal exposure for my color correction. This enables me to make my color separation and halftone at the same time on contrasting panchromatic plates. I have found that most of the correction necessary so far which I have had to make, has been in adding color in order to make certain places solid. If colors that are carefully balanced with a filter are used in printing, a great deal of color correction trouble is eliminated. You can test the balance visually by looking at them through a filter. If it is not the right shade it will appear grey. The same holds for the rest of the colors.

Methods of masking, layout and stripping are pretty commonly known throughout the trade, so there is not much use of my dwelling on them too long. It is common practice to use blue print keys where there are a number of different subjects up for color. Of course if there are duplicate subjects it is better to use a photo-composing machine.

There should be some method of storing flats. We use a case with a number of trays similar to the trays in a baker's wagon, and store the flats consecutively and monthly. A record of the number on the corner of the plate is kept in a file. This could be put on the work ticket if necessary. The plates should be filed in the same manner.

Of course, aluminum plates are far and away superior to zinc plates for reproduction, as the metal is harder and a finer grain can be obtained which helps in keeping the small halftone dots sharp. In Canada, however, due to the war, we are unable to get aluminum plates, so we have to make zinc plates do. Our plates are grained with a ∞ quartz sand, so as to give as fine a grain as possible.

IF you have trouble with blind spots appearing in the work after the plate has been put on the press, it is probably due to caustic being used in taking old work off the plate. We have found it more satisfactory to give additional graining time in preference to taking the old work off by caustic for this reason. Steel balls are liable to give trouble on the plate after it has been put on the press, because either particles of the balls are pressed into the plate while graining, or some electrolytic action is set up so that little spots appear which look a great deal like oxidation.

The best procedure to follow when making albumen plates is the one recommended by the Lithographic Technical Foundation, with care being taken to take accurate Baumé readings and to follow the formulae exactly. The method which I recommend for making deep-etch plates is the dichromated gum method about which information can be obtained from the Lithographic Technical Foundation.

A thing which I am doing, which may be a little different, is to vary the whirler speed in coating the plate according to the variation in relative humidity. This allows me to give the same exposure time regardless of the variation in humidity. I use as a normal comparative humidity 50°, and as a normal whirler speed on a vertical whirler 50 R.P.M. I vary the whirler speed .75 R.P.M. for every degree change in relative humidity above or below 50°.

It is very necessary in press work to check the water fountain solution with some sort of a pH test, if you are not lucky enough to have electrolytic means of testing. A dye indicator (Bromescol Green) will do just as well, but unless you check carefully the acidity in the fountain, you will have trouble with your plates on the press. If your acidity is right, you should be getting 75,000 runs from an albumen plate, and 250,000 runs from a deep-etch plate. One of the signs of too great acidity on a deep-etch plate is the smoothing of the grain. Of course, it is very bad to use chromic acid.

The ammonium dichromate phosphoric gum fountain etch recommended by the Technical Foundation is very satisfactory. Of course, it is essential that the press be kept very clean and that the packing in back of the plate and blanket be made as exactly as possible, so that the cylinders are riding on their bearers, and so that there is only half a thousandth squeeze between the plate cylinder and blanket cylinder. The form rollers must be set so that they are riding evenly on the plate, and the back cylinder adjusted carefully so that there is not too much pressure. It is better to start with too little pressure and then to bring it up, than to start off with what you think is just right and spoil the plate by filling in halftones and fine work.

There will be, undoubtedly, a change in press procedure with the idea of eliminating the water fountain. It will either be done by making a relief plate, with which there has been considerable

(*Turn to page 61, 2nd col.*)

The four-page insert opposite was taken from the current issue of the *Life*-like Canadian magazine "New World," printed in part by offset lithography by Ronalds Offset Lithographers, Ltd., Montreal. The 16-page section produced by offset is printed in 8-page forms, sheetwise, on 30 x 44—167 M Oxford Litho Book. The run is 100,000. It is printed on a 41 x 54 offset press from deep-etch plates made by the gummed-top method. The halftones are made on an overhead dark room camera by a method of correction devised by Donald Nicholson, production manager at Ronalds. The type is shot from letterpress proofs and the combined positives are made with contact positives made from the original negatives. The ink is a straight black which has been toned by process red to give it a brown shade. It is printed from zinc plates since aluminum are not available at the present time in Canada, due to the war.

unshine Store: is domain of Brother Gregory. Clothes from all over Canada, U.S.

Swimmers bathe in crystal Muskoka River which runs beneath walls of Mission.

rdener: Father Morley is the official gardener.

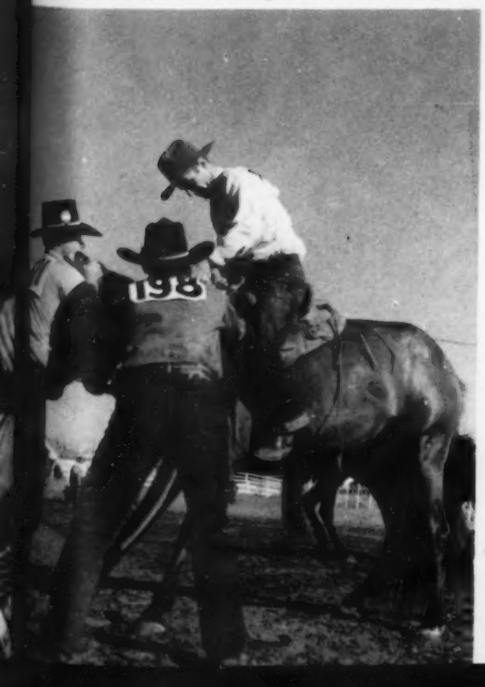
Helpers carry water and train the vine tendrils at Mission.

Sisters of St. Margaret live in Bracebridge.

untle Elvin and Director Dillon look the show over.

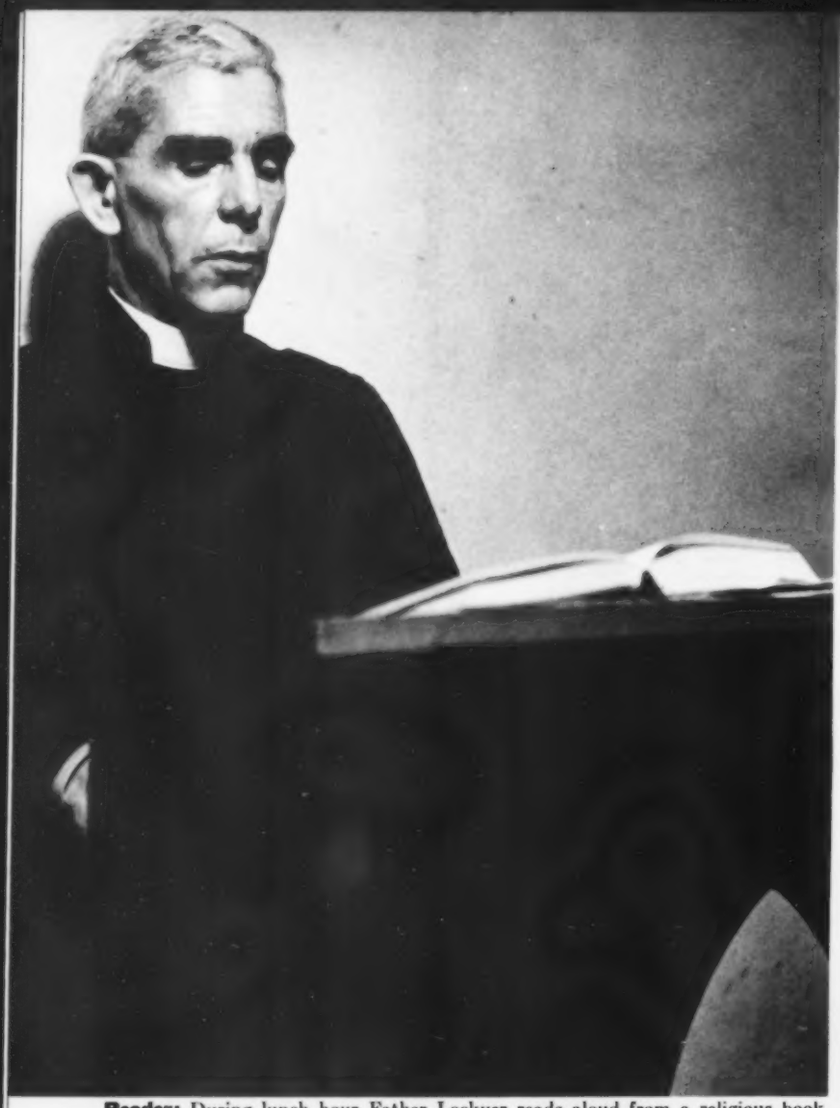
ians parade streets of Calgary in colourful costumes.

d Horse race is most exciting event of the Stampede.



Calgary Stampede is annual bust-up for cowboys from every point on the prairie; is world's largest rodeo.

Most Hilarious event of Stampede is wild cow milking. Contestants work in pairs; one ropes, other milks.



Reader: During lunch hour Father Lockyer reads aloud from a religious book.

Washing Dishes: Communal life and humility are simply illustrated when
Father Superior, Reverend Father Palmer, washes dishes with Brother Geo

Laundry: Father James is an expert with the tubs and clothes-line. He ca
from St. Mary's, Ont., has recently left monastery to join the Canadian Ar

Printer: Father Loosemore knew nothing about printing until he star
working on the second-hand presses at Mission. The Fathers print two pape

LITHOGRAPHED IN CANADA

LITHO-DOPES

By R. J. McEachen

and

J. A. Beierwaltes

E. J. Kelly Co., Kalamazoo, Mich.

FOR better or worse the doping of printing inks in the pressroom is being gradually eliminated. Two of the most important reasons are: first the increasing demand for increased pressroom production, and second, the rapid advances and changes in printing ink formulation. This is particularly true of letterpress plants. Naturally when make-ready time allowances are being pared down, doping time as far as estimates are concerned is simply out of the question. This of course is not quite so true in the lithographic field. But in both fields increasingly stringent requirements for printing inks, and the natural progress in the field itself are so changing inks that it is becoming rather difficult for even the most seasoned dopester to do an intelligent job of adjusting his inks.

Between the extremes of promiscuously doping every untried ink which enters the pressroom and being unable to correct even the slightest pick, lies a middle course of real importance to every pressman if only he will not let a little success spur him on to unnecessary efforts. A pressman, lithographic or letterpress, who can adjust inks he has on hand to fit slightly differing conditions, yet still knows where to stop, and when to turn the job over to his ink maker is a job and downtime saver. So let's dope a bit, but let's try to do it right.

The more one knows about the inks he uses and the adjusting materials, or dopes, the more intelligently he can tackle an ink adjustment problem. So let's go into this subject of inks, varnishes, driers, and compounds—dopes to you.

Printing and lithographic inks generally speaking consist of pigments, vehicles, or varnishes, driers, and compounds, the proportions of which are carefully balanced according to the work the ink is required to do. Lithographic ink differs from letterpress ink largely in that the offset inks must not emulsify with the slightly acid damping solution. There are a good many other differences of course. Offset inks are generally much heavier than letterpress inks, and being heavy makes them run cleaner. They are of course much stronger than letterpress inks of the same shade. Offset inks do not have the penetration qualities of letterpress inks and generally are much tackier. Offset inks usually are bought without any drier at all, or with about half the drier the ink will carry when printing. In other words, offset pressmen like to add about half the drier to their inks, thus giving them more control over them.

Of the pigments, the blacks are made by burning oil or illuminating gas in an insufficient supply of oxygen. In other words, a carefully made soot. The colors are generally of three types: (1) those made by organic synthesis (an offshoot of the dye industry); (2) those made by inorganic reaction, such as the opaque oranges and yellows (lead chromates), milori and prussian blues, etc.; and (3) the few natural earth colors which are now only used because of special properties they may have in spite of being heavy, abrasive and poor working compared to the first two types.

Pigments for lithographic inks must be very carefully chosen for resistance to "etches" or acid damping solutions, and should be as tinctorilly strong as possible. The vehicles, or varnishes as they are known in the printing ink

Between the extremes of doping every untried ink which enters the pressroom, and being unable to correct even the slightest picking, lies a middle course of real importance to every pressman. Learn that middle course, advise the authors, and abide by it.

industry, fall into three different classifications:

1. Vegetable drying oils—such as linseed, the most important, china wood, perilla, hemp, etc., and treated fishoils.
2. Synthetics—made by cooking the new synthetic resins with the above vegetable, treated fishoils, or petroleum or mineral oils.
3. Petroleum or mineral oils of different viscosities and boiling points.

The vegetable drying oils, upon being heated at definite temperatures for definite periods of time, assume definite bodies or viscosities. These bodies have been classified from the softest to the heaviest as boiled oil (raw linseed with drier cooked in), #00000 (5/0). #0000 (4/0), #000, #00, #0, #1, #2, #3, #4, #5, #6, #7, #8. The following bodies of linseed oil most widely used as dopes in lithographic pressrooms, roughly named in the order of their importance, are #1, #3, 5/0 or boiled oil, #7, or #8 (body gum). The #1 and #3 are generally used to soften an ink which is too heavy and tacky. The softer the varnish used in reducing the ink, the less it will take to bring it to the required body and also the shorter and greasier will be the body of the softened ink. These varnishes should not be used to reduce non-scratch, non-crystalizing, or high gloss inks unless they are so recommended by the manufacturer. Also, reducing the bodies of inks with #0 and #00 varnishes somewhat retard the drying which must be compensated for by adding more drier. Adding a large proportion of boiled oil to an ink will cause the printed sheets to stick together.

The #3 and #1 varnish make fine reducers for heavy offset inks. They soften the body without making them greasy. The #7 or #8 varnishes, commonly known as body gum, do a fine job of "pulling" an ink together. They heavy up the body, make it tackier, make it lay better, make it print cleaner, and "dry," or non-greasy. Strangely enough, these long sticky varnishes will also make an ink very short, buttery and destroy its flow, causing it to back away from the fountain roller. These heavy varnishes also tend to make lake colors "liver" more quickly. Used sparingly, however, they come in mighty handy from time to time, especially if the pressman is willing to stir down the ink in the fountain occasionally to prevent the form running light.

It is generally considered much better to reduce a too heavy ink with #1 or #3 varnish to the desired consistency, than to reduce it down with boiled oil or 5/0 and then to add dry magnesia to eliminate greasiness. The other vegetable drying oils and treated fish oils are seldom needed in the pressroom and only then at the specific instruction of the ink maker.

THE drying action of the vehicle or varnishes of conventional printing inks is believed to be a combination of oxidation and polymerization. By oxidation we mean that the oil absorbs oxygen from the air, the oil on the surface undergoes a chemical change. During this change, the "skin," a chemical compound differing from the original oil, is formed. Polymerization is the joining together of the separate molecules of the oil to form a compound which is similar to, but is much more viscous or heavier than, the original oil. Linseed dries chiefly by oxidation. The synthetics dry by a combination of both except in a few isolated cases where they dry entirely by polymerization. The petroleum derivatives do not actually dry at all.

Certain materials have been found which will greatly hasten the above reactions without entering into chemical combinations with the vehicle. The catalysts found to be the most effective are the metals cobalt, manganese, and lead, named in the order of their effectiveness, and are used as driers in the form of metallic soaps, ground in oils or varnishes.

The effectiveness of each drier is usually judged by the percentage of active or effective metal in the soap. The brownish-purple-red cobalt driers now on the market, in one form or another of this type of drier, are generally used to make an ink dry quickly with a hard, shiny, more rub-resistant surface. Cobalt dries from the top and is said to be hard on the blanket.

Manganese, as a drier, dries in a manner somewhat similar to cobalt, but it does not make the inks dry as fast or quite as hard. Lead in drier form makes an ink dry evenly throughout the film without the hard crystallized surface promoted by the other two metals. Instead, it produces one more mellow or receptive to overprinting. The paste driers are usually a mixture of manganese soap and lead resinate or linolcate ground in a varnish or oil. Driers for lithographic inks must be very carefully chosen so that they will not react with the damping solution or etch. Lead in driers seems to be the most common offender, and in some forms cannot be used generally at all—for example, in the form of lead acetate. The addition of too much drier is usually accompanied by poor working and printability of the ink, and rapid drying on the press with no faster drying on the sheet. An excess of lead drier in letterpress ink is accompanied by even slower drying on the stock. Some inks require more drier than others, depending on the varnishes and dry colors used. The chrome yellows, greens, and iron blues will by themselves promote drying, and persian oranges, tungstated colors, etc., have a tendency to retard it.

The compound formula numbers in the files of ink makers who have been in business any length of time at all run into the hundreds. In spite of the fact that every color matcher and formulator has his own pet mixtures, printing ink compounds are generally designed to give an ink certain properties—often at the expense of other qualities which may not be of importance. For instance, compounds which improve the laying properties of an ink often cause halftone screens to fill, but if there are only solids and type in the form for which the ink is intended, then a slight aggravation of filling tendencies makes no difference.

Waxes ground or dissolved in oils will help prevent offset or reduce the tackiness of the ink which may be "picking" the stock; on the other hand, it may not improve the clean printing or drying qualities. This type of compound can make a very hard, rub-resistant ink a soft smeary one if used to excess. It has been found also that an excess of waxy compounds added to inks often prevents following colors "taking" over them, and aggravates scumming difficulties.

The judicious use of these varnishes, driers and compounds to overcome common difficulties is certainly to be commended and will make life sweeter

(*Turn to page 61, 3rd col.*)

STANDARDIZING
halftone technique

Halftone work is exacting but not difficult. Remove the variables, follow a standard procedure, and mystery and doubt are eliminated.

By HERBERT P. PASCHEL

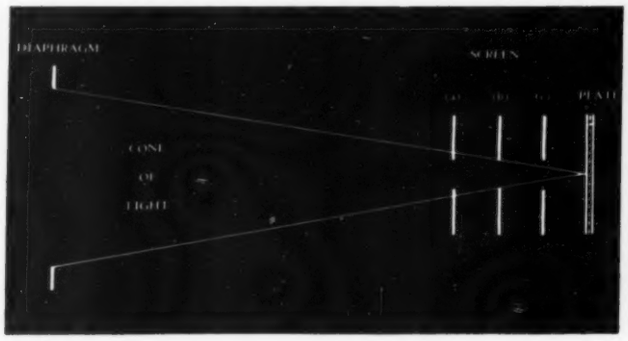
HALFTONE technique need not be a confusing nor mysterious procedure. The essential requirements for successful halftone photography are: a simple yet, detailed understanding of the action of the screen, a knowledge of procedure to follow regarding exposures and lens openings for copy with different characteristics, and ability to classify copy matter according to defined categories.

A scientific understanding of screen action is not at all necessary, since it will add very little to the quality of halftone negatives. In fact, the three major theories which attempt to explain screen action are not entirely in accord with one another. Ives has suggested that the openings of the crossline screen act as pin-hole lenses, thereby projecting a vignetted image of the lens aperture on the negative. Whereas, a number of workers, including Levy, Gamble and Fruwirth, have promulgated the theory that defraction of light by the edges of the screen openings is responsible for the formation of dots of varying size.

Fruwirth has undoubtedly conducted the most thorough and definite research on the defraction theory. The basic idea of the third, the penumbral theory, is that indistinct shadows are projected by the screen lines, which are lengthened or reduced according to the intensity of the light reflected by the copy. But of greater importance than theories is the known fact that the halftone screen does function according to set rules.

Experience and observation show that, regardless of the basic cause, the action of the halftone screen is not the same at various distances from the sensitive film or plate. Figure 1 graphically illustrates this point. We see the cone of light projected by a lens of a certain aperture intercepted by the halftone screen at three different distances. At (c) the screen is too

Fig. 1, left, showing the varying points of interception of the light rays by the screen at three different distances from the plate, with a fixed lens opening. Fig. 2, right, showing how with the screen at a fixed distance from the plate, varying apertures project cones of light that are intercepted in different ways, only one of which (b) is correct.



close thereby offering no chance for proper interception of the light rays by the screen rulings. At (b) the screen is at the correct distance while at position (a) it is too far away from the plate and therefore intercepts, or blocks the light rays too soon.

We have learned from experience and observation also, that various size lens openings do not project identical cones of light for interception by the screen rulings. In figure 2 we see that different size apertures influence the function of the screen. With a very small stop (c), the cones of light are narrow and not properly intercepted by the screen. A very large opening (a) projects correspondingly large cones of light, which are blocked and scattered by the screen with consequent loss of halftone gradations. With a correct aperture, as at (b), the light rays are intercepted properly and produce the required screening effect.

The distance between lens and plate varies with different degrees of magnification and reduction. With a set lens opening, variations in the distance between lens and plate will also vary the character of the light rays projected to the screen. It follows, therefore, that the camera and screen adjustments must be coordinated in order to establish a standard and dependable working routine. Experience has shown that a definite relationship exists between the *screen distance and screen opening and the lens aperture and camera extension.* From this relationship, formulas have been evolved by means of which, at a fixed screen distance, the lineal dimensions of the diaphragm are varied with each change of the camera extension, in a proportion equal to the ratio of the screen distance to the screen opening. By dividing the camera extension by the effective diameter of the lens opening, we obtain a certain ratio which must be used in determining the correct distance for separating the screen from the plate. This is obtained by multiplying the screen opening by the ratio obtained from the previous calculation. The most satisfactory ratios have already been established by experienced workers, thus eliminating the need for further experiment by the photographer. It has become common practice to use two ratios, 1:64 and 1:90, but any ratio ranging between these two may also be employed with little perceptible difference in negative quality. The 1:90 ratio requires greater exposure than the 1:64. Therefore, the 1:90 ratio may be used with fast films and plates, whereas the 1:64 ratio would expedite exposures on slower materials.

Screen Distance

Having decided upon the ratio to use, the correct screen separation may be determined with comparative ease. A 1:1 screen (which is the most commonly used) contains as many opaque lines per lineal inch as it does transparent lines. In the case of a 120-line screen, the width of either the opaque or transparent line is 1/240 of an inch. The equation for making the determination is as follows:

screen opening $\times$ ratio $=$ screen distance

Substituting the values known we get—

$$1/240 \times 64 = \frac{64}{240} = \frac{8\frac{1}{2}}{32}\text{" screen distance}$$

$$1/240 \times 90 = \frac{90}{240} = \frac{12}{32}\text{" screen distance}$$

This distance is measured from the ruling itself. The refraction of light by the rear glass of the screen introduces an error which must be compensated for if great exactitude is desired.

Glass of different composition varies in its refractive index. The screen maker is best liable to advise what allowance should be made for the particular screen employed. An approximation, however, can be made by deducting one-third of the thickness of the rear glass from the calculated screen distance. In the example given above the calculated screen distance for a 120-line screen with the 1:64 ratio was found to be 8½/32". If the thickness of the rear glass is 3/32", then the actual separation between the sensitive surface of the plate or film and the rear surface of the screen would be 4½/32".

The ruling of the screen is either determined by the process employed or by the dictates of the customer. The camera extension is dependent on the scale of reduction or magnification. These two factors may be considered as fixed. The remaining operations, namely, size of stop and screen distance, are variable. According to halftone procedure either of the two may be varied providing they are coordinated. It has been found expedient, however, to keep the screen distance with any particular screen at a standard distance regardless of the scale of reduction or enlargement, and alter only the stop in accordance with variations in camera extension. By means of this system the photographer reduces the number of variables and insures more complete coordination. An additional and very important consideration when using this method is that the exposure remains constant

Fig. 3

Courtesy Eastman Kodak Co.

Lines Per Inch	*Screen Opening, Inches*	*Screen Distance*		
		1/32"	*mm.*	*Ratio*
50	1/100	29	22.5	90
55	1/110	26	20.5	
60	1/120	24	18.7	
65	1/130	22	17.3	
85	1/170	17	13.2	
100	1/200	14½	11.2	
110	1/220	13½	10.7	
120	1/240	12	9.4	
133	1/266	7½	6.0	64
150	1/300	7	5.3	
175	1/350	6	4.6	
200	1/400	3½	2.8	32

for different degrees of reduction or magnification, all other factors of course, remaining equal. Thus, if the job calls for several halftones of different sizes from the same copy, these may be treated alike. Copies of similar nature may also be accorded identical treatment. The operator need only judge the copy and vary the exposure to suit the copy. When copy runs uniform, so does the technique. The chart illustrated in Figure 3 gives the screen distances for the popular screen rulings based on the formula outlined. The necessary allowance for glass thickness must be determined by the worker.

Size of Stop

The diameter of the aperture is dependent on the distance from the lens to the sensitive surface of the plate or film. Since this distance constantly varies, the operator must depend on scales attached to the camera or to automatic diaphragm controls. In the absence of such equipment this distance may be calculated by means of the following equations:

For enlargement:

camera extension = (f x R) + f

For reduction:

camera extension = f/r + f

f = the focal length of the lens.

R = number of times that the linear dimensions of the copy divides into that of the image.

r = number of times that the linear dimensions of the image divides into that of the copy.

When using a 24″ lens and the image is twice the size of copy, we obtain the following factors.

f = 24″

R = 2x

According to the above formula we get: (24 x 2) + 24 = 72″ camera extension.

To obtain the correct aperture to use at this degree of magnification we divide the camera extension (72″) by the ratio used. For the 64 ratio we would need an aperture opening of 1.12 inches, whereas for the 90 the diameter would be .8 inches. The collar of the lens has the familiar f markings which are speed values, but which are also an indirect indication of the diameter of the lens opening.

The speed or transmission factor of a lens is obtained by dividing the focal length of the lens (at infinity focus) by the diameter of the effective aperture. Thus a 16″ lens with an effective aperture of 2″ operates at a speed of f.8. The term "effective aperture" is used to denote the true or optical opening of the lens. The physical opening in a diaphragm or Waterhouse stop is not, as is believed, the true lens opening. The front element of a lens, if convergent, condenses the rays of light before they reach the diaphragm. Hence, the optical or effective aperture is usually slightly larger than the actual lens opening. If the diameter of the diaphragm were measured by means of calipers or some such instrument, such findings would be misleading. However, the manufacturer has taken the effective aperture into account when calculating the

(*Turn to page* 53)

DIAPHRAGM CONTROL INDICATOR

Scale of Reproduction Ratio 64	CORRECT APERTURES					Scale of Reproduction Ratio 90
	Highlight	Middletone	Detail	Flash	Flash	
4.0	f: 9.5	f: 11.5	f: 16.5	f: 22.5	f: 32.5	—
3.5	f: 9.75	f: 11.75	f: 16.75	f: 22.75	f: 32.75	—
3.0	f: 11.0	f: 16.0	f: 22.0	f: 32.0	f: 45.0	—
2.75	f: 11.25	f: 16.25	f: 22.25	f: 32.25	f: 45.25	—
2.5	f: 11.5	f: 16.5	f: 22.5	f: 32.5	f: 45.5	4.0
2.25	f: 11.75	f: 16.75	f: 22.75	f: 32.75	f: 45.75	3.5
2.0	f: 16.0	f: 22.0	f: 32.0	f: 45.0	f: 64.0	3.0
1.75	f: 16.25	f: 22.25	f: 32.25	f: 45.25	f: 64.25	2.75
1.5	f: 16.5	f: 22.5	f: 32.5	f: 45.5	f: 64.5	2.5
1.25	f: 16.75	f: 22.75	f: 32.75	f: 45.75	f: 64.75	2.25
1.0	f: 22.0	f: 32.0	f: 45.0	f: 64.0	f: 90.0	2.0
.75	f: 22.25	f: 32.25	f: 45.25	f: 64.25	f: 90.25	1.75
.66	f: 22.5	f: 32.5	f: 45.5	f: 64.5	f: 90.5	1.5
.50	f: 22.75	f: 32.75	f: 45.75	f: 64.75	f: 90.75	1.25
.33	f: 32.0	f: 45.0	f: 64.0	f: 90.0	f:128	1.0
.25	f: 32.25	f: 45.25	f: 64.25	f: 90.25	f: —	.75
.20	f: 32.5	f: 45.5	f: 64.5	f: 90.5	f: —	.66
.12	f: 32.75	f: 45.75	f: 64.75	f: 90.75	f: —	.50
.10	f: 45.0	f: 64.0	f: 90.0	f:128	f: —	.33
—	f: 45.25	f: 64.25	f: 90.25	f: —	f: —	.25
—	f: 45.5	f: 64.5	f: 90.5	f: —	f: —	.20
—	f: 45.75	f: 64.75	f: 90.75	f: —	f: —	.12
—	f: 64.0	f: 90.0	f:128	f: —	f: —	.10

SCALE OF ENLARGEMENT (left) — SCALE OF REDUCTION (left) — SCALE OF ENLARGEMENT (right) — SCALE OF REDUCTION (right)

Courtesy Gevaert Co. of America, Inc.

Fig. 4. Adjacent to the degree of enlargement or reduction in the scale on either side of the chart will be found the correct apertures to use. The spaces between consecutive notches on the iris control ring of the lens are divided into four equal parts. The numbers in light type after the diaphragm values indicate the percentage of distance beyond a specific stop.

SILK SCREEN . . .

a printing process with many advantages for the lithographer.

By J. I. Biegeleisen

Scene: Any lithographic establishment. Time: Present. The production manager and his assistant are discovered in conference.

Asst. P.M. "Now, how are we going to tackle this Glamour Toothpaste job? It calls for a run of 20,000 *sheets?"*

P.M. "What's so unusual about that? We've handled bigger jobs."

Asst. P.M. "I know, but this is different. The specifications call for 17,000 *posters to be printed with English copy, and the remaining* 3,000 *sheets to be imprinted in ten different languages!"*

WELL what would *you* do? The best solution to this problem and to many other similar production puzzlers is the Silk Screen Printing Process. This hypothetical order can be handled nicely and profitably by combining the use of lithography and silk screen on the one job. The 17,000 sheets with the English copy can be completely lithographed. At this point, the lithographer should print the remaining 3000 posters, omitting the lettering. For imprinting the required foreign copy on these incomplete posters, the opaque paints used in silk screen printing will come in handy.

The use of silk screen in a case like this is practical and profitable. It is practical because the silk screen stencil prints with special opaque paints, and there is no problem encountered in printing a light color over a dark one. Process colors as a matter of fact, can be made so opaque that white will cover and obliterate even black. It is profitable because whereas a special set of litho plates for short runs of foreign copy would boost production costs, the inexpensive plates or stencils for the silk screen method help keep costs down. Of course, the silk screen process is used not only for imprinting in one color, —it is an all-around process for printing complete displays in any number of colors. Its simple three-guide manual-feeding system makes accuracy in registration a mere matter of care.

Let's briefly examine the process in order to better understand its use. The silk screen process is evolved from the principle of the stencil. The stencil is attached to a "screen" or ground of silk bolting cloth, which in turn is stretched across and tacked onto a rigid wooden frame. This frame is hinged to a flat board or "printing base" so that the frame may be raised and lowered in a fixed position on the base. There are several ways of making a stencil, but this much they all have in common. By means of the stencil, parts of the silk screen are blocked out and other parts are left open, conforming in design to the art work to be reproduced. Process paint is poured into the screen and is pushed across the silk with a firm rubber squeegee which is manipulated

by hand. The parts of the screen "closed" or blocked out by the stencil act in a negative way: they prevent the paint from passing through the fine mesh of the silk. The "open" parts of the screen permit the free penetration of paint and result in positive printing. Consequently, an even coat of paint is transferred through the "open" silk areas to the printing surface directly under the stencil. Since the stencil design is impregnated in the silk, there are no "floating islands" within the design or lettering to worry about.

In silk screen work, little equipment is required, and there is not much in the way of bothersome makeready. Stencils are by no means fragile, nor are they rigidly standardized as to size. Each stencil is made to fit the individual job and not the other way around. Banners as large as twenty feet in length can be printed in one operation from one large stencil without piecing or matching sections. Since a screen is an inexpensive and uncomplicated affair, it can be tailor-built to accommodate a job of any size.

Silk screen printing mediums include regular "Japan" colors, special water colors, metallic pastes (gold and silver), dyes, glue, overprint varnish, and miscellaneous mediums such as glass etching compounds, and special adhesive compounds for tinselling and flocking. The colors can be made transparent or 100% opaque, and may be made to dry with a mat or glossy finish.

FOR MULTI-COLOR work, there are dozens of standard process colors to choose from, and what with intermixing, and the wise use of transparencies, a wide array of shades and hues are at the colorist's disposal. What is more, a free choice in the use of mediums makes it possible to print on an assortment of surfaces. Any reasonable smooth stock, no matter how thin or thick it may be is all right for silk screen. This naturally includes paper, cardboard, glass, leather, cloth, or even wood and metal. What seems equally interesting is the fact that the printing is done directly on stock of any thickness, from flimsy cellophane to clumsy wood. This covers a lot of territory and again helps to cut costs by eliminating the expense and trouble of mounting and counter-mounting.

The greater part of silk screen stencil making is done by hand. This, in a measure, is a point in the favor of silk screen, for it means that a perfect original is not required. The artist engaged in preparing a silk screen stencil exercises not only manual, but also artistic skill. Frequently, due to the pressure of circumstances, a good pencil sketch with the color scheme indicated in pencil in the margins represents the "master sketch" handed to the stencil artist. He "squares up" the lettering, and improves upon the art work generally, as he makes the stencil. In this way a great saving is effected, for the expense of buying a perfect original for photo-mechanical reproduction methods, in view of the short run, would very often exceed the cost of the complete stencil for silk screen. The same silk screen is used again and again without replacement for any length of time.

Lithographers really cannot afford to handle any job not big enough to absorb the cost of the required art work, makeready, and plates. The progressive lithographer, however, knows that he owes it to his business as well as to his client to accommodate customers on "small fry" jobs in order to get a chance to do the big one. Silk screen is the lithographer's logical ally in problems of this sort. It is by no means a rival of lithography. It is most suitable for work in the flat poster technique where there is little blending, and its greatest limitation lies in the fact that it is a hand-operated process. As a result, production is limited to from 200 to about 300 prints per hour depending upon the nature of the job.

COATED PAPER . . .

By DON NICHOLSON, W. B. WHEELWRIGHT
and
C. W. LATHAM*

COATED paper should be thought of as two thin sheets of vastly different materials, bonded together to make one sheet. This material is the ideal medium for relief forms of printing. In fact, it was developed primarily for letterpress and later adapted to the more severe demands of offset in so far as possible, but it still falls far short of the ideal offset paper for three major reasons.

First, coated paper does not lend itself satisfactorily to presses using water. When regular coated was first tried it was found that the thin film of water that the offset blanket takes from the plate in the non-printing areas softened the paper coating to such an extent that much of the coating adhered to the blanket, ruining results. This point has partially been eliminated now by making the coating more insoluble in water, but it still softens and will give trouble where the water is excessive.

The first rule, then, is always to reduce water to a minimum. This can best be done by using a grain on the metal plate that will carry sufficient moisture down in the grain itself to keep the plate clean, and thus avoid above surface moisture that will tend to overwet the blanket. It is generally admitted that aluminum, having a greater affinity for water than zinc, will stay cleaner and print sharper with a finer grain and less dampening solution than zinc and is, therefore, the preferable plate for coated paper printing. It is also a fact that certain types of deep-etch plates have a thicker water carrying coating in the non-printing areas, and will perform with less free moisture to wet the blanket. Albumen plates treated with the bichromated gum etch also have this advantage.

Softening of the coating, however, is not the only danger of this moisture pick-up in the press. Coated paper is quick to curl upon any change of moisture content, due to the fact that the coating expands less under moisture change than the paper base. So keeping this pick-up at a minimum is also important in the prevention of curl.

Besides reducing plate moisture to a minimum, moisture pick-up in the press may further be reduced by seasoning the paper before running in an atmosphere of eight or more points higher relative humidity than the condition of the pressroom. The losses in moisture by the paper going through the press in the pressroom's dryer atmosphere will tend to offset blanket pick-up.

Another moisture difficulty with coated paper is the problem of getting enough moisture into the stock to make it act properly in an offset press. It is practically impossible to produce coated paper with over 4½% moisture content, unless the moisture be added after the calendering process, because the surface will become black at the stacks if more moisture is present. However, if the paper leaves the mill with 4½% moisture, and lays flat under this condition, it will curl toward the coated side if the lithographer raises the moisture content to 5½% through seasoning, or it will curl away from the coated side if the lithographer allows it to dry out to 4% moisture.

Second, coated paper does not lend itself to the better-running offset inks. In order to properly print coated stock, with its smooth, poorly-absorbent coating, it is necessary to use soft buttery inks that will not pick the water-softened coating, and will penetrate and attain some measure of bond.

A certain amount of penetration is vital to offset printing in order to enable the colors to cling to the paper and be rub-proof. If too much penetration takes place the pigment is robbed of its protection and becomes chalky and is subject to bleed, but a little is necessary for bind and also for proper drying and for these reasons the ink must be

A three-way discussion of its use for offset, with special attention to the production problems involved.

*Mr. Nicholson is production manager of Ronalds Offset Lithographers, Montreal, Canada; Mr. Wheelwright is author of "From Paper Mill to Pressroom" and conductor of the column, "Offset Paper at Work," which appears in this magazine; Mr. Latham is a consultant on pressroom problems, an instructor at the Lithographic Technical Foundation and conductor of the monthly column "Offset Press Operation," appearing in this magazine.

EDITOR'S NOTE

This is one of a series of eight four-page menus depicting South American subjects recently produced by the offset lithography process by Acwell-Tone (Acwell Press, New York) for Moore-McCormack Lines of New York, for distribution on its passenger vessels. The idea for the eight South American subjects was originated by Arnold Hartmann of the Moore-McCormack staff while on a cruise to that continent. The menus were produced under the supervision of James F. Roche, director of public relations and advertising for the company, and the artist was C. A. Rosser.

Requests for copies of the exotic menus are pouring in from tourists and souvenir hunters all over the country. The menus have proved so popular that Moore-McCormack is planning to produce an additional 200,000 copies. If you would like a set, please write to MODERN LITHOGRAPHY and we shall convey your request to Moore-McCormack Lines in New York.

softened. This does not improve the working qualities of the ink. When offset ink lacks body and tack, it loses some of its ability to pull out sharp tints. It also loses its ability to fight off the encroachment of water on the plate, and unless the water is kept at an absolute minimum, trouble will result. Also more dryers are necessary when there is lack of absorption.

Another point is emulsification. When an ink loses its body, it loses some of the characteristics which keep it from combining with the water, and a dull lifeless compound is the result, as well as poor drying and stripped rollers. Ink must be softened for coated paper, but it must be done cautiously. Do not overdo it, or greater troubles will arise.

Third, coated paper is not suited to the blanket method of printing, due to the smooth, flat, intimate contact between these two surfaces. Under printing pressure in any type of press, there are certain strains, stresses and compressions set up in the paper, and unless the paper is elastic, or unless there are places of expansion where these stresses may expend their energy, then trouble results. By places of expansion is meant the routed, or other below surface, non-printing areas in the letterpress form, or valleys found in the fancy-finished, embossed offset papers, commonly termed "antique," "pebbled," "linen," etc., which are primarily designed for offset work, and are probably the best performers we have on the offset press.

In printing coated papers by offset, therefore, it is very necessary to print with a minimum of back cylinder pressure. If the blanket is accurate as to thickness and the cylinders perfectly true, squeeze pressures of three one-thousandths may possibly be obtained, and everything possible should be done to bring the pressure down to this point. Due to the highly polished surface of coated paper, ink transfer from the blanket is adequate with a three-point squeeze.

Another point of possible trouble, due to blankets, is blanket tack. Due to absorbed oils, and oxidation, blankets become soft and sticky and unfit for coated paper printing. The harder blankets become tacky more slowly and, as they print very well on this stock, are preferable to soft rubber blankets. Certain types of synthetic blankets are particularly adapted to coated paper printing due to their low tack, but in any case it is advisable to use a blanket that is accurate in thickness and free of embossing. For if these undesirable elements are present, the pressure will have to be excessive. This will cause an adhesion between paper coating and blanket that will result in pick and tearing of the sheets and, because of its relative lack of elasticity, paper distortion and poor fit.

In conclusion, we call attention to the fact that, in spite of its drawbacks and the care necessary for its running by the offset method, coated paper is being lithographed successfully every day on very exacting work, such as labels, with beautiful results and there is no reason why more work cannot be produced on coated paper. The important thing is to remember to reduce water, ink and pressure to a minimum; to soften the ink to proper consistency; and to use good blankets, stock that is made for offset, and of a proper moisture content.

—C. W. LATHAM

•

"THE greatest trouble with offset lithography," said Horace S. Kipe, well-known lithographer, before a recent American Institute of Graphic Arts meeting, "is that lithographers try to do too much. . . The primary feature of the process is its increasingly effective capacity to reproduce illustrations, both single and multi-color, on a wide variety of uncoated papers."

Nevertheless there is a growing tendency among lithographers to use coated paper for offset printing. To what extent is this justifiable?

In previous articles in our column, "Offset Paper at Work," in MODERN LITHOGRAPHY, we have stressed the fact that one of the advantages offset enjoys above letterpress printing is its ability to employ uncoated paper for illustrations with better results than by letterpress, and to do jobs on strong paper which can only be printed by letterpress on paper which is relatively weak. Furthermore, the uncoated stock costs less, grade for grade, than enamel and in the finish usual for offset work is free from the glare that might interfere with reading.

When, therefore, the lithographer turns to the use of coated paper, his decision to abandon the advantages mentioned must be justified by good reasons. The basis for these reasons should be found in the manner that the finished job must function. One cannot wisely sacrifice too much just for the sake of appearances.

To cite a specific case where a coated offset was used to better advantage than uncoated, we have in mind an inexpensive hanger. It might be described as a paper pennant advertising a food product at point of sale. You see these pennants frequently in chain groceries suspended from a line. The paper needs to be heavy enough to hang straight, but there is no need for strength, durability, or permanence. Appearance was absolutely the only important factor to be considered in the choice of paper, and therefore coated

While the information and opinions expressed in this article are based on the first-hand experiences and observations of the three authors, they reserve the right to disagree with each other and grant the same right to the reader. The subject of coated paper, how best to run it and for what kind of work, and the method of approach to the several production problems involved is, we have found as a result of recent investigation, one about which the lithographer seems to know very little—and not quite sure of that. The same seems true of the paper manufacturer. As one paper manufacturer remarked, in reply to our request for information about some of the technical problems involved, "There is no question but that the use of coated paper is increasing rapidly in the lithographic industry, but the task of gathering facts about moisture content, viscosity of inks, use of dryers and reducers, types of blankets, press speeds, etc.,—all of which are controversial subjects at present—is far from complete. In fact, it has not even begun." Perhaps this article will provide some sort of beginning. We shall welcome comments from our readers—The Editor.

paper was used. The lithographer submitted proofs printed with the same ink on both uncoated and coated stock. On the latter the colors and a halftone looked brighter and snappier. For the given purpose there was no question but that the coated paper functioned to better advantage. The customer did not hesitate to give it his okay.

In another instance an annual catalog had to be produced. There was no question but that the illustrations would look snappier if printed on coated offset. Nevertheless, they looked very well on the uncoated stock and would give an entirely adequate idea of the goods to be depicted. The more important factor was the consideration of how the catalog would withstand handling before a new one would be issued. On this basis the choice naturally fell on the uncoated paper.

The general public does not look at a catalog with the critical eye of a printer, nor as an example of graphic art. Some of us are so printing-conscious that we give too much weight to technical considerations which are not of paramount importance to the layman, while overlooking functional properties of more practical importance.

Another thing for the lithographer to bear in mind is that as long as he produces good offset printing on uncoated paper he has, as Mr. Kipe mentioned, "a wide variety of uncoated papers" at his command and an "increasingly effective capacity to reproduce illustrations" on a sort of paper his competitor in letterpress cannot use to produce good illustrations.

When the offset lithographer resorts to coated stock he is bringing his performance into direct comparison with letterpress work, which is admirably adapted for halftone and color process on enamel paper. Moreover he is educating his trade to a taste for snappy prints on glossy paper, when it would be to his advantage to cultivate the taste in the opposite direction. Printing is somewhat subject to fashion, the trend at present may be toward the use of gloss ink and glossy paper; for certain kinds of jobs it is very appropriate.

Of course the lithographer should be prepared to use coated offset, and recommend it whenever its use enables a job after being printed to function better than if on uncoated stock. All functional factors being equal, however, it would appear to the advantage of the lithographer to influence his customers to prefer the uncoated paper.

—W. B. Wheelwright

•

THE old clay loaded supercalendered papers were calendered hard and, as a result, developed slippery, resistant surfaces which caused ink to skid away from the center of the halftone dots and to pile on the edges of the spaces between the dots. This uneven piling of ink produced irregular or mottled tones in halftone prints. Carbonate loaded supers do not require severe calendering and, therefore, do not become as slippery nor as resistant as the old clay loaded supers, but offer a better affinity for ink which minimizes mottling.

Paper cannot be justly blamed for mottling in halftone prints because almost any coated paper can be printed without mottle provided the halftones are open and free of critical tones. Yet the fact is that some coated printing papers have greasy, slippery surfaces that permit ink to skid away from the center of the halftone dots and to pile on the edges of the spaces between the dots, thus emphasizing the two tone effect called mottle.

An ink that binds well with one paper will not necessarily bind well on all papers. Differences in the varnishes and binders used in inks and in the proportions of fibers, casein, clay and other materials used in paper create some variations in affinities between ink and paper. Therefore, if an ink will not bind firmly to a sheet of paper, neither the ink nor the paper should be condemned, but the ink maker should be informed of the difficulty so that he can supply an ink that will bind on the particular paper being used.

Periodically printers have had difficulties with jobs because the ink fails to dry on the printed sheets. It is possible that some fault in the paper might prevent the ink from drying, but the possibility is remote. Observations over a long period of time indicate that paper should not be blamed if the ink fails to dry. Of course, some papers absorb ink slowly and retard drying. A varnish litho coated is designed to hold ink on the surface and unquestionably would retard the drying of the ink.

Most of the real trouble at one time in running coated paper for offset arose from the fact that the paper was not prepared with the idea of using it for lithographic printing. Most paper companies now make paper that is especially prepared for offset. Another trouble that is encountered is with the ink when it is prepared so that it will run best on normal offset stock. The ink that is to be used on coated papers should be run thinner. Perhaps the best way of doing this is by the addition of a small amount of ∞ varnish and some sort of wax. The following is a formula for a wax which is easily prepared:

Olive Oil	½ oz.
Paraffin	½ pint
Oil of Lavender	1 oz.
Ethyl	2 ozs.

Of course it is necessary to add a drier in proportion in order that the ink will dry in sufficient time so that the job may be handled.

A common mistake is an attempt on the pressman's part to set the pressure that he thinks right for the job and then to find that it is too heavy. The best way is to start with the pressure low, and then bring it up gradually until the press is printing properly. The best results seem to be obtained by using a water fountain solution tested with a pH indicator, and running the percentage of acid which is recommended by the Lithographic Technical Foundation for the particular kind of plate you are running.

Picking or lifting occurs when the pull of the printing ink is stronger than the holding capacity of the casein sizing used in the paper, or by the blanket being unnecessarily tacky. If the blanket is tacky, it will cause the picking to occur all over the sheet and not only in the work. The blanket may be hardened by the usual carbon disulphide solution containing sulphur. Again, picking may be caused by a weak or tender coating, in which case it is very likely that the particular paper has not been coated especially for offset and has too great an ash content. If the picking is caused by unnecessarily tacky ink, the picking will occur only in the work, in which case the addition of the ∞ varnish and the wax, with the running

(*Turn to page 51*)

Technical news and Literature

This is a regular department conducted by Mr. Martin, of the Harold M. Pitman Company, in which technical books, articles, papers and similar literature of interest to the lithographic industry are reviewed and discussed. It is intended as a supplement to the Lithographic Abstracts prepared by the Research Department of the Lithographic Technical Foundation, Inc. The author will comment upon and elaborate further those Abstracts which, in his opinion, warrant it. This month he reviews the new Litho Manual.

BY KENNETH W. MARTIN

NOW that the long evenings are at hand the Waltwin Publishing Company has thoughtfully provided instruction and entertainment in the form of the second edition of "The Lithographers Manual." Eighty-seven separate articles cover a mighty range of subjects from "Vibration Isolation in Lithographic Plants" through "The Importance of Press Cylinders" to "The Psychology of Color." Fortunately, stops are made along the way for topics like "Lithographic Production Procedure," a general discussion of lithographic methods; "Lithographic Camera Operations," a more detailed outline of negative making; and "Graining Lithographic Plates," a very thorough report on one of the most important and most frequently neglected lithographic operations.

The fact that most of the material contained in the present edition of the "Manual" has previously been published in no way detracts from its value as a reference book. Magazine articles have a way of getting lost or misfiled and the 370 odd, 8½ x 11 pages of the "Manual" are not likely to be mislaid except by the "borrowing method." It is evident that a sincere effort has been made to cover the subject thoroughly and there are few volumes available at the present time that do the job better. There is an index to aid the reader in finding the answer to specific questions. The habitual reader will approve the dull stock and legible type face used throughout the book.

It is most unfortunate that this lithographed book which is obviously fated to have a wide distribution among people interested in the Graphic Arts should suffer from uneven printing.

The Lithographers Manual. Compiled by Walter Soderstrom. The Waltwin Publishing Company, New York, 1940. 8½ x 11 inches, 368 pp. ($5.00)

PRINT—A Quarterly Journal of The Graphic Arts—gets under way nicely by defining the term "graphic arts" as "all the means by which ideas are reproduced in visual form." With such a broad base from which to spring, *Print* carries in its first number an outline of the history of printing from Gutenberg to 1800, two articles on modern advertising methods, a critical review of Textbook Design, and an imaginative story of a look into the future with the suggestion that present methods of printing will be superseded first by photographic methods and finally by electrical recordings on metal wires.

Print addresses its message to lovers of fine printing with more attention given to results than to methods. An interesting and valuable addition to the magazine is the section of "Notes on Production" appearing at the end of the publication. Printing processes used in the first number include collotype, gravure, and letterpress. Included in the numerous engravings are prints from an original linoleum block and an original woodcut.

Print. Volume 1, No. 1. New Haven, William Edwin Rudge, Publisher, Inc., Quarterly. ($5.00 per year.)

SINCE writing on the subject of high-etch plates in the October issue, it has come to the writer's attention that one or two plants are running these plates on standard presses with much less depth of etching on the plate than was recommended in the original article. In fact difficult work, that is, work which has large spaces between the lines is being run with plate depths of .010" or less. The secret seems to be the use of an extremely hard blanket. The ink rollers do pile up ink all over the plate but apparently in the non-printing parts, an equilibrium is reached and at a point a few thousandths below the work level, the rollers take away the ink as fast as they deposit it. Under these conditions, if the blanket is packed properly and is hard, it will not pick up ink from the plate. An occasional washing of the plate and blanket is said to be necessary even under these conditions, but not more frequently than once every ten thousand impressions.

•

Opens New Research Lab.

H. D. Roosen Co., Brooklyn, N. Y., announces the establishment of a new and modernly equipped research laboratory under the direction of I. M. Bernstein. Mr. Bernstein has had wide experience over the past twenty years in both the scientific and practical phases of ink manufacture. The new research laboratory has been established as a service of benefit to buyers of both lithographic and letterpress inks. The Roosen Company is holding open house at their new research laboratory for all members of the graphic arts industry.

IN AND ABOUT THE TRADE

Rosenstadt Named N. Y. President

Lee Rosenstadt, Ardlee Service, New York, was elected president of the New York Photo-Lithographers Association at the annual meeting held last month. Other officers elected for 1941 are Victor Friedman, Crafton Graphic Co., vice-president; and Sam Grossman, Laurel Process Co., treasurer. Walter Soderstrom will continue as executive secretary. The officers named above, along with Archie Fay, National Process Co., J. W. Schepp, K. L. M. Process Co., and William J. Volz, Sackett & Wilhelms Lithographing Corp., comprise the board of directors. In December the New York Photo-Lithographers will hold their annual Christmas party. Time and place will be announced later.

•

Heads Baltimore Litho Club

E. W. Parker, Photo-Litho Plate Graining Co., Baltimore, was elected president of the Litho Club of Baltimore last month at the annual meeting. Other officers named were Otto Molz, vice-president; K. O. Bitter, secretary; and E. A. Steinwedel, treasurer. The new board of governors consists of Michael A. Flynn, Clement V. Abbott, Fred W. Green, Henry P. Baitz, Geo. A. Brown, Milton M. Roberts, J. Albert Caldwell, Frank A. Orendorff, Lloyd Bowden, and Ernest S. McCleary. Past-president William A. Garten, who automatically continues as a member of the board, was presented with a traveling bag in appreciation of his excellent leadership during the past year.

•

Phila. Club Elects Jensen

William H. Jensen, Dando-Schaff Printing & Publishing Co., Philadelphia, was elected president of the Philadelphia Litho Club at the annual election of officers held last month. Herman Hanselman, Penn Lithograph Co., was elected vice-president. Other new officers including the board of governors are John Knellwolf, United Lutheran Publishing Co., Inc., treasurer; Fred W. C. French, Lanston Monotype Machine Co., secretary; Kenneth Whitecar, of Alpha Lithograph Co.; Ronald Byers, Litho Can Corp.; Anthony Capello, Joseph Hoover & Sons; George Frank, Crown Can Co.; Walter Harris, Ketterlinus Lithographic Manufacturing Co.; Stanley Heise, Dando-Schaff Printing & Publishing Co.; George N. Johnson, Patterson Parchment Paper Co.; Walter Kaiser, Edward Stern & Co.; Dr. L. F. Rogers, Bond Manufacturing Co.; Roy Bensing, Bensing Bros. & Deeney, and William Stevens, Marcus & Co.

WILLIAM H. JENSEN
. . . heads Philadelphia Litho Club

•

Govt. Seeks Lithographers

The United States Civil Service Commission has again announced an examination to secure artistic lithographers, negative cutters, and copper plate map engravers. They are urgently needed for national defense work. Applications will be rated as received at the Commission's Washington office until further notice. The positions to be filled are:

Senior artistic lithographer, $2,000 a year; artistic lithographer, $1,800 a year; assistant artistic lithographer, $1,620 a year; and junior artistic lithographer, $1,440 a year. Negative cutter, $1,800 a year, and junior copper plate map engraver, $1,440 a year. The salaries are subject to a 3½ percent retirement deduction.

Applicants will not be given a written test but will be rated on their qualifications as shown in their applications and on corroborative evidence. For the lithographer positions, applicants must have had experience in lithographic reproduction work, preferably in the reproduction of maps or charts. For negative cutter, they must have had negative cutting experience in lithographic reproduction work including lettering, painting out, or inserting new work. Further information regarding the examinations and the proper application forms may be obtained from the Secretary of the U. S. Civil Service Examiners at any first- or second-class post office or from the United States Civil Service Commission, Washington, D. C.

•

Champion Elects New Board

Stockholders of Champion Paper and Fibre Co., Hamilton, O., elected the following board of directors at the annual meeting last month: Charles C. Benedict, Henry S. Bowers, H. G. Pounsford, H. T. Randall, R. B. Robertson, H. W. Suter, A. Thomson, Jr., L. G. Thomson and Scott Zoller.

The following officers were also named: L. G. Thomson, president; R. B. Robertson, executive vice-president; H. W. Suter, vice-president and general sales manager; R. B. Robertson, Jr., vice-president; Clarke Marion, vice-president; H. T. Randall, vice-president; A. Thomson, vice-president; Scott Zoller, secretary and treasurer; J. L. Henson, comptroller and assistant secretary; C. S. Bryant, assistant treasurer, and W. J. Damtoft, assistant secretary.

Dividends of $1.50 a share on preferred stock, payable January 1, 1941, to stockholders of record December 14, 1940, and of 25 cents a share on common stock, payable December 16, 1940, to holders of record November 30, 1940, were declared.

•

Anderson & Sons, lithographers, formerly of Springfield, Mass., have moved to Westfield, Mass.

PAC Clinic at Philadelphia Draws Record Attendance

A COMPLETE picture of the history and development of the $250,000,000 American lithographic industry, from its humble beginnings in 1818 to the present day, was traced at the all-day Printing and Advertising Clinic sponsored by General Printing Ink Corp. in Philadelphia last month. It was held in connection with "Living Lithography," the national exhibition which was presented throughout the entire month by the Philadelphia Art Alliance in collaboration with the Lithographers National Association, New York. The program included speakers prominently identified with the advertising and graphic arts fields.

Dr. Howard T. Hovde, Department of Marketing, Wharton School of Finance and Commerce, University of Pennsylvania, presided at the clinic. A "Review of the Industry in America" was the first address on the program, and was delivered by Maurice Saunders, chairman of the board of the Lithographers National Association. Mr. Saunders has been associated with the lithographic industry for more than fifty years.

Joseph Jackson, historical advisor of the exhibit, followed Mr. Saunders with a talk on "The Development of the First Commercial Era." "Philadelphia can be regarded as the first American city to experiment with lithography," said Mr. Jackson. "Then came New York, Baltimore and Boston, in that order. Thomas Dobson, an enterprising and daring Philadelphia publisher, imported a lithograph stone from Bavaria and presented it to the American Philosophical Society, probably early in the year 1818. On May 8, 1819, Bass Otis, a Philadelphia artist, produced the first recorded American lithograph from that stone—a magazine illustration carried in *The Analectic Magazine*.

W. N. Misuraca, supervisor of lithography, National Can Corporation, followed Mr. Jackson with a chronological discussion of the "Transition to Modern Commercial Production." "There has been more than just a transition from the old-fashioned lithographic methods to those in commercial use today," he said. "There has been a complete change, and an

W. N. Misuraca

entirely new graphic method has been created. It is wrong to think of modern methods of lithography as offshoots of the old lithographic methods, because the only link that we retain is the fact that in both cases we employ a flat surface to print from, using water as a repellent. Which development contributed most to this new lithographic process," he went on, "is still an open question. I say that it was the application of research that lifted it from an empirical method to the scientific industry it is today."

Following a luncheon recess, M. E. Goldman, account executive, The Aitkin-Kynett Advertising Company, Philadelphia, spoke on "Types of Lithography for Advertisers." Discussing the difficulty he encountered in getting clear-cut explanations of various types of lithography, Mr. Goldman said, "Many lithographic processes are for one reason or another not sold as lithography. Many buyers have no appreciation of the fact that they are buying lithography. I mention this confused concept of lithography because it seems to me that both buyers and sellers are being definitely handicapped by it. Lithography is a generic description of a reproduction process. It has some very positive and definite advantages to offer for certain types of work. The important thing is that prospects be sold on the broad concept of the industry."

"I am frank to admit," he continued, "that before visiting the exhibition of 'Living Lithography' I had a very meagre concept of the broad application and general use of lithography. I think that the sellers of lithography should attempt to break down the limited concept that most people have of the art, by emphasizing the wide

W. J. Wilkinson

scope to which lithography is applicable. Once this is established, the buyers will automatically call lithographers into the picture more frequently."

D. J. Finn, advertising manager, RCA Manufacturing Company, Inc., Camden, N. J., followed Mr. Goldman with a talk on "Lithography as a Merchandising Tool." The meeting closed after a discussion by Mr. W. J. Wilkinson, president, Zeese-Wilkinson Company, Long Island City, N. Y., of "Lithography in the Future." "It must be admitted," said Mr. Wilkinson, "that the business of offset lithography has made tremendous strides in the last

few years and has accomplished far more advancement in that art than any other process in the same period of time. Lithography is a very important business today, and while it will not supersede letterpress, its field will keep on growing in quality and quantity. There cannot be any doubt of the future of lithography and its constant growth, and it is sincerely hoped that those engaged in the industry will, by diligent effort and constant improvement, make it the outstanding method of reproduction."

Plan Itinerant Litho Exhibit

Although the national exhibition of lithography, which has been presented throughout the entire month of October by the Philadelphia Art Alliance in collaboration with the Lithographers National Association, was dismantled October 31st, its message will be circulated to the widest possible audience throughout the entire United States.

The plans include: an itinerant "Living Lithography" exhibit sponsored by the American Institute of Graphic Arts; a color motion picture recording the entire story of the show, which is being prepared by Eastman Kodak Company; a booklet on lithography, consisting of addresses made at the all-day Printing and Advertising Clinic held on October 17th in Philadelphia, sponsored by General Printing Ink Corporation; a black-and-white motion picture on lithography now in the process of production by the Harris-Seybold-Potter Company; and a souvenir, illustrated booklet telling the story of the show and the lithographic industry.

•

First, second and third awards (reading down the page) in the 11th Annual Exhibition of Outdoor Advertising Art, held in Chicago November 7th. The first award design was lithographed by U. S. Printing & Lithograph Co., while both the second and third award winners were lithographed by Gugler Lithograph Co.

Ottman Heads N. Y. Guard

Brigadier General William Ottman, former president of the Lithographers National Association, was recently appointed by Governor Lehman of New York to command the New York Guard, a force of 11,640 men now being organized to replace the State's National Guardsmen. In civilian life, Gen. Ottman is vice-president of United States Playing Card Co. and chairman of the board of United States Printing and Lithographing Co., New York.

•

Twins for the Rossottis

Alfred Rossotti, president of Rossotti Lithographing Co., North Bergen, N. J., recently became the proud father of twin girls. It is apparent that Al's long association with large scale production, declare his friends, has not been without influence on his private life. The report is that both "vignettes" are excellent, and color is perfect. Congratulations are pouring in from all sides from a host of friends wishing the best of health, happiness and continued prosperity for the lucky parents.

•

Bowling Under Way at Reserve

The Reserve Litho Bowling League, sponsored by Reserve Lithograph & Printing Co., Cleveland, began a new season last month. The teams, which have been equipped with new uniforms donated by the company, have been matched on a schedule based on last year's averages. An interesting race is expected in competition for the $500 prize which is awarded the championship contingent at the close of the season. Two of Reserve's stellar players, Ralph Ellis and Bill Comfort, will not be active in the inter-plant competition this year due to the fact that both have enlisted in the U. S. Army.

KODAGRAPH C.T.C. PANCHROMATIC

A NEW EASTMAN FILM FOR DIRECT COLOR SEPARATIONS

Inspecting the gray scales in a set of color-separation negatives

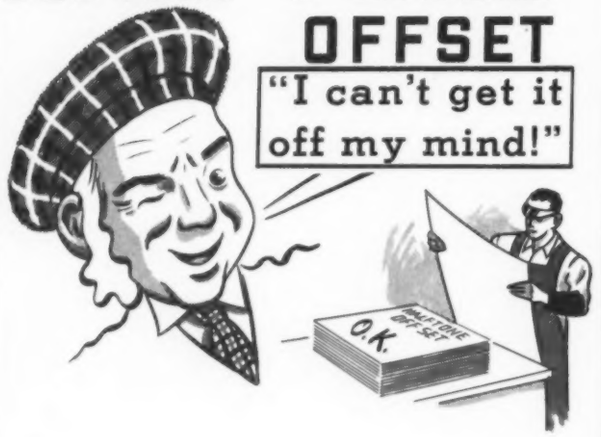
KODAGRAPH C.T.C. (Contrast Thin Coated) Panchromatic Film Antihalation is a special film for making color separations, particularly in large sizes and by the direct method. Its fully color-sensitive emulsion is similar to that of the widely popular Wratten C.T.C. Panchromatic Plates.

A new, heavy base (.0085-inch) with special characteristics is a vital factor in maintaining close register. The antihalation backing discharges completely in processing, thus facilitating comparison of the negatives for balance and general quality. The thin emulsion coating produces a crisp halftone dot, providing considerable latitude in local reduction.

For ease of handling and economy, notably in large-size work, use the new Kodagraph C.T.C. Panchromatic Film. It is furnished in standard Graphic Arts sizes in cut sheets and rolls up to 40″ wide. See your Graphic Arts dealer.

EASTMAN KODAK COMPANY *Graphic Arts Dept.* Rochester, N.Y.

HALFTONE OFFSET



And no wonder!

Halftone Offset is the stock for results . . . at an economical price.

Even the name appeals! It's "Halftone" because midway between offset enamel and regular offset. Dull or gloss . . . no mottling. Real class!

Push HALFTONE OFFSET

Get "the other fellow" better acquainted with it . . . he will get better results!

Save money by shipping 'via Miami Valley Shippers' Assn.

Makers of Quality Offset, Lithograph and Book Papers

THE CHILLICOTHE PAPER COMPANY

Executive Offices and Mills:
CHILLICOTHE — OHIO

Pacific Coast Sales Office:
1003 N. MAIN ST., LOS ANGELES, CALIF.

Chillicothe
A BUY-WORD FOR HIGH-GRADE PAPERS

This year,
. . . as every year
LITHOGRAPHERS
are thankful for

ECLIPSE
DEEP-SET
BLACK

Such gratitude is not undeserved either. For year after year Eclipse Deep-Set Black continues consistently to perform without a hitch, wherever work of superior quality is demanded. It is this characteristic of top-level accomplishment at all times that has won a warm place for Eclipse Deep-Set Black in the hearts of lithographers everywhere. That is why this year, as in years past, lithographers are genuinely grateful. They know they can *depend* on Eclipse Deep-Set Black. They know Eclipse Deep-Set Black *will never let them down.* Don't you agree that that *is* something to be thankful for?

● Eclipse Black is only one of the many unusual inks made by this company for the lithographer.

Gaetjens, Berger & Wirth, Inc.
35 York St., Gair Bldg., Brooklyn, N. Y.
538 South Clark St., Chicago, Ill

Berlin Suffers Slight Fire

Chicago firemen were called to the I. S. Berlin Printing & Lithographing Co. plant, of that city, last month when spontaneous combustion of oily rags started a fire in the company's private laundry. Officials report it was extinguished with only slight damage.

•

Hoe Expands

To fill national defense contracts totaling more than $4,000,000, R. Hoe & Co., New York, are converting part of their present facilities to that use, and plan to erect a $40,000 welding plant on Locust Avenue, Bronx, for the manufacture of gun parts for the Navy Department. The new plant will be of brick and steel construction, and will increase the manufacturing area to approximately 190,000 square feet.

•

Addresses Young Lithos

Modern trends in packaging were described and illustrated by C. A. Southwick, General Foods Corp., New York, in a talk before a meeting of the Young Lithographers' Association at the Advertising Club, New York, last month. Paper package combinations are coming to the fore, he said, adding that there will be greater use of paper and functional coatings, such as moistureproof cellophane, lacquers, "hot melts," etc., in the future. He made the prediction that the package of the future will be a plastic transparent container which can be made at low cost and can be fabricated on either existing glass or can making equipment.

Harold Bergen, of McKinsey & Co., New York, management consultant, addressed the November 13th meeting of the Young Lithographers' Association held at the Advertising Club in New York. Mr. Bergen's topic was "Profiting by Management." The November 13th meeting of the Young Lithographers was open to members only.

•

Schultz Adds New Harris

H. J. Schultz, Chicago lithographer, installed a new Harris 35 x 45 two-color offset press in October, the addition being required to keep abreast of the trend to color work, he said. Mr. Schultz's first two-color offset press was installed some time ago. He also operates two single-color offset presses. During the past year his equipment modernization program included purchase of a new camera, new lamp, a Monotype composing machine and other machinery. Early next year an additional 10,000 square feet of floor space will be acquired, adjoining present quarters at 231 West Institute Place. This will be used chiefly by his newly organized subsidiary, the H. J. Schultz Co., which manufactures a line of deep etch chemicals. Since introduction of this line, the business has grown with surprising rapidity, according to Mr. Schultz.

•

Entertains Chicago Club

The Chicago Lithographers Club enjoyed their Columbus Day luncheon last month as guests of American Printing Ink Co., of that city. In the absence of President Frank Hochegger, Albert Brinkman of Magill-Weinsheimer Co., vice-president of the club, headed the party of fifty lithographers who participated. W. R. Coate, assistant plant manager for American Printing Ink, acted as host with Dr. Floyd E. Barmeier, chief chemist, Wm. Metcalf, plant superintendent, and members of the research laboratory staff.

Guest speaker was W. Lang, production manager of the Merrill Publishing Co., Chicago, publishers of school text books and juvenile books. Mr. Lang told of his company's experience in the use of gloss inks of all colors for offset production, and how a patented coated board was developed which takes gloss ink and eliminates varnish. On one run, he said, this method saved two days production time. The club also met on October 24 at the Atlantic Hotel, to hear an address by Dr. Ira Freeman of the Y. M. C. A. College, who discussed developments in the use of infra-red rays for heating.

•

Demonstrates Inkometer

The Lithographic Technical Foundation held a demonstration of the Inkometer, the new instrument which it has developed for measuring tack and length of printing and lithographing inks under practical conditions, at the lithographic department of the New York Trade School last month. Professor Reed of the Research Department of the Foundation was on hand to supervise the demonstration and answer questions.

Editor Joins Ryan

James Fitzgibbon, former editor of the Opelousas, La., *Daily World*, has joined the sales staff of E. G. Ryan & Co., Chicago agents for the Webendorfer-Wills division of American Type Founders. On October 15 he addressed the Inland Daily Press meeting in Chicago, where he related his experiences in operating the first American offset daily. Earlier he had spoken at the mechanical division meeting of the Illinois Press Association in Springfield, Ill. Other speaking dates for printers' meetings are being arranged by the Ryan company. While he has severed all active connection with the Opelousas offset daily, Mr. Fitzgibbon stated that this pioneer project will be continued under the editorship of John Thistlethwaite.

•

New Illinois Blue Book Published

Chicago offset plants number 169, according to the 1940 edition of Printing Trades Blue Book, Illinois section, recently issued by A. F. Lewis & Company, publishers. This figure is as of January 1, 1940, and represents an increase of eleven new plants over the previous year's record. In downstate Illinois 39 offset plants are operating, this being an increase of five from the year before. Close study of the directory's 510 pages reveals that if the number of new presses installed in both offset and letterpress plants could be fully determined, the increase in lithographic operations in Illinois could be more impressively shown. Lewis company statisticians revealed that on October 1, of this year, there were 2,585 graphic arts operating units in Chicago and 1,555 in Illinois outside that city. This figure includes letterpress, offset, engraving, typesetting, bookbinding, etc. On October 1, 1939, the corresponding Chicago figure was 2,513 and 1,571 downstate.

•

Kodak to Build Optical Plant

Eastman Kodak Co., Rochester, N. Y., plans to construct a six-story addition to its Hawk-Eye works for the manufacture of optical equipment for national defense purposes, it is announced.

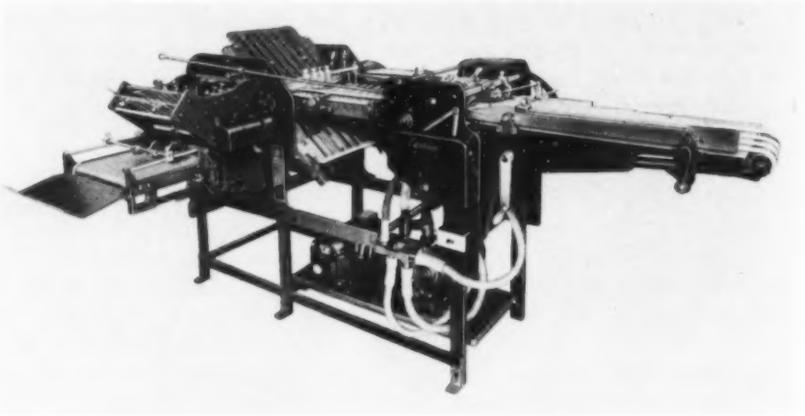
•

Tobey Fine Papers, Inc., St. Louis, and Peoria Paper House, Inc., Peoria, Ill., were recently named as agents for Hammermill Paper Co., Erie, Pa.

The Improved MODEL "W" CLEVELAND

This New Continuous Air Wheel Fed MODEL"W" Cleveland will feed and fold the highest class of work with bleed edges and solid plates without marking.

Likewise other new improvements make the MODEL"W" faster, more accurate and more profitable. Ask for literature describing the improved MODEL"W" Cleveland.



DEXTER FOLDER COMPANY • Pearl River, New York

Owners and Operators of

MULTILITHS

Send for our Price List of All Chemicals —Rollers—Blankets, etc., and Save many dollars on Supplies as well as improving the quality of your work.

Ask for Price List "M"

LITHO CHEMICAL & SUPPLY CO.

63 Park Row, New York, N. Y.

NEW EQUIPMENT AND BULLETINS

Announces New Process Aid

Lanston Monotype Machine Co., Philadelphia, announces the development of the Monotype-Huebner Universal Process Machine for preparation of copy, making combination negatives and positives, multiple negatives and positives, photo prints, combination proof plates and production press plates, etchings on metal, scribing register and center lines, and scribed lines in ruled forms in one or more colors on developed negatives. The new machine is equipped with the Monotype notch-bar and micrometer method of positioning which, it is claimed, guarantees extreme accuracy. Further information available on request.

•

Hammermill Issues Folder

A folder containing samples of broadsides, mailing pieces and other promotional material lithographed on Hammermill offset paper is being distributed by Hammermill Paper Co., Erie, Pa. Included in the collection are specimens from such varied sources as hosiery advertisements, a fishing catalog, a travel folder and others which demonstrate the reproduction characteristics of the Hammermill stock.

•

New Book on Color

Fotoshop, Inc., New York, has just published a basic course on color photography, complete with technical data on films, filters and developing chemicals for the graphic arts industry. The new handbook is wire-bound and conveniently indexed for ready reference. Included, in addition to the basic course on color, are formula tables and laboratory instructions for all graphic arts reproduction processes, reviews of the latest books on color photography and graphic arts data, a buyer's directory and a description of lighting equipment for the camera man. Containing 120 pages, the new Fotoshop publication sells for $1.00. To all who purchase $10.00 worth or more of graphic arts equipment, Fotoshop announces that the handbook will be distributed free of charge. This new book should prove a valuable addition to the lithographer's library. Further information available on request.

•

Revises Price List

The Senefelder Co., New York, is distributing a complete new price list for lithographic plate graining materials and etches. The new price list includes quotations in four separate lots of steel clay marbles, glass marbles, lignum vitae balls, steel balls, graining quartz, pumice, powder and carborundum powder. Quotations are also offered on a complete assortment of plate etches, washing-out solutions, correction slips and plate preparing materials. Copies of the new price list are available on request.

•

Strathmore Handbook

Strathmore Paper Co., West Springfield, Mass., is distributing its new 1941 edition of the Strathmore Handbook which contains samples of the complete range of Strathmore bond and writing papers, together with a color selector of individual swatches of Strathmore book and cover papers. The color selectors, which proved to be a popular feature of the last Strathmore Handbook, are improved in the new edition by a method of cross checking.

•

Gummed Paper Folder

Mid-States Gummed Paper Co., Chicago, is distributing a folder printed on gummed paper, illustrating its complete line of 85 grades of "Really-Flat" gummed papers. Distribution is being effected through paper jobbers throughout the country. Copies are available on request.

•

Photo-Lith Adds New Line

Photo-Lith Sales, Chicago, has recently developed a new line of special platemaking equipment for small plates up to and including 17" by 22". Included in the new line of equipment is a layout table, a whirler, a vacuum printing frame and a camera. Photo-Lith announces that, to companies installing its equipment, a free lot of platemaking supplies will be made available, together with personal instructions in making plates under the supervision of the company's representatives. Further information may be obtained on request.

A Sign of High Quality

SIEBOLD

HYKLAS
Transfer Paper

(LONGLIFE)

Technically Made in U. S. A.

FOR HYKLAS LITHOGRAPHERS

Years of demand for Transfer Paper manufactured in America has been becoming greater and greater and due to the unsettled conditions in Europe we have succeeded in accomplishing the manufacture of this paper.

During the last World War crisis we manufactured a TRANSFER PAPER which was tried, tested and proven to be the exact need for the Lithographic Transferer in America.

The custom of Siebold of always handling nothing but the best, assures you that this HYKLAS American manufactured TRANSFER PAPER will meet the requirements of the most critical and exacting transferer.

WHY NOT ASK FOR TRIAL SHEETS AND LET US QUOTE YOU?

IMMEDIATE DELIVERY IN TWO SIZES:

26X33 and 33X46

•

J. H. & G. B. SIEBOLD, Inc.

"Over Half a Century of Service"

Printing **INKS** Lithographing and Lithographic Supplies

Office: 47 WATTS STREET NEW YORK

Factory: 99 SIXTH AVENUE NEW YORK

WAlker—5-5565-6-7-8

OFFSET BLACKS COLORS SAFETY INKS ROLLERS
MOLLETON DAMPER COVERS RUBBER BLANKETS

Hop Aboard!

The final phase of the drive to make lithography better known to buyers everywhere through distribution of *Litho Media* is nearing a close.

You can still join this crusade!

Certainly the first ripe plums of a greater and wider use of the lithographed product will fall to those who have taken part in it. Buyers everywhere have been impressed with this impressive demonstration of the selling power of lithography.

So hop aboard!

The final available 1,000 copies of *Litho Media* will carry your name on the presentation frontispiece bound in every book. In addition, you will be provided with a complete circulation list of many hundreds of leads to prospective customers. The 1,000 copies are being distributed to buyers within 500 miles of New York who are not using lithography at present but should be. Your subscription to this cause will assure you of a short, direct and profitable route to the men you want to sell.

The fee is $100.

Send no money now. Just write to

Robert P. Inglis, Executive Secretary

EASTERN LITHOGRAPHERS ASSN.

110 E. 42nd St. New York, N. Y.

Sinclair & Valentine Add Paper Testing Department

SINCLAIR & Valentine Co., New York, recently established a paper testing department as a part of its research service to aid in solving problems of ink formulation in connection with requirements of paper stock.

Six testing devices have been acquired by the company. The Mullen Tester, for measuring the active bursting strength of paper stock, provides a standard test for searching out imperfections or defects in paper. The material under test is subjected to sufficient strain to break it, indicating the behavior of the paper under actual conditions of use.

Another device, a Pick Tester, is used to determine whether a particular coated stock is suited for gloss inks. The strength of coatings and their adhesion to the body stock, and also an estimate of the amount of tack which is permissible in the ink to be used on that paper, are measured.

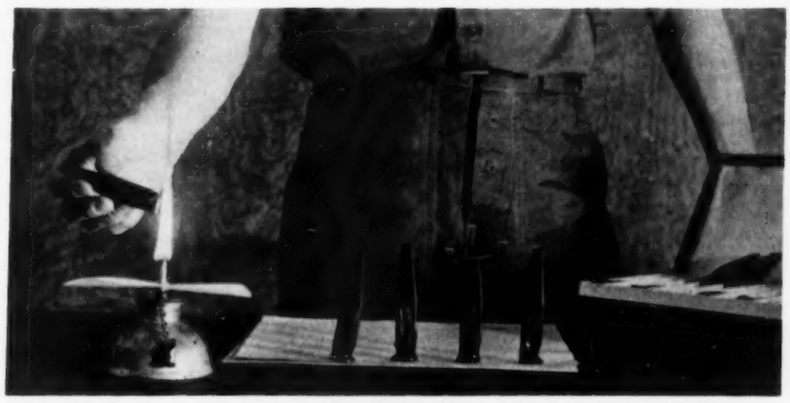
For determining the moisture content of a stock, a Stock Hydrometer has been installed. It is said to be particularly useful where the paper is delivered preconditioned to meet pressroom requirements. As paper stretches when it picks up moisture and shrinks when it dries out, a check on the moisture content before using it will help prevent misregister which might arise from variations in paper size due to changes in moisture during printing.

The relative susceptibility of various stocks to penetration by inks is another consideration being studied in the S. & V. laboratories, and the Penetration Test is carried out with the aid of a special preparation manufactured by the company. It is frequently because of variation in penetration that an ink does not take properly to a stock upon which it has been used successfully in the past. Sometimes penetration variations result in loss of "ink mileage."

The Gurley High Pressure Densimeter is the standard instrument for measuring the porosity of paper. Since porosity is closely associated with formation, the test helps control the selection of papers to give the proper absorption of ink. The Elmendorf Tearing Tester, another machine used by Sinclair & Valentine, measures the ease with which a certain paper stock may be torn. This test, although it is sometimes confused with other tests, does not measure tensile strength but tearing strength, which is an entirely different thing. Resistance tearing is an important factor in stocks which will later be subjected to sudden jolts.

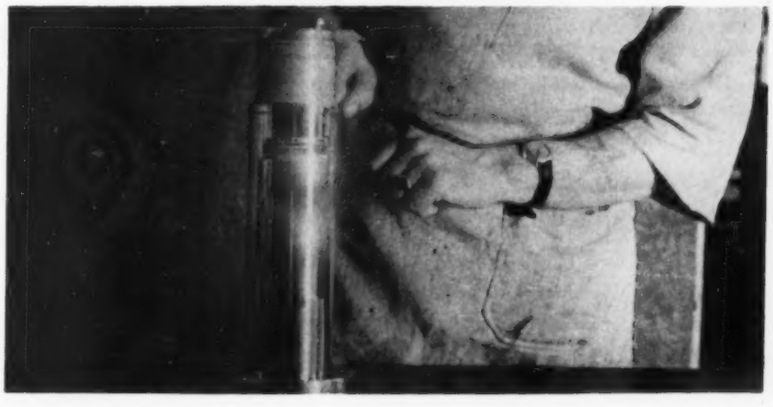
SOME OF THE EQUIPMENT IN THE NEW S & V DEPARTMENT

The Mullen Tester



The Pick Tester

Gurley High Pressure Densimeter



The Elmendorf Tearing Tester

SERVICE PLUS QUALITY!

HAS MADE OUR PLANT THE WORLD'S LARGEST

WE SPECIALIZE IN SMALL PLATES
ALSO REGRAINING MULTILITH

ZINC and ALUMINUM PLATES
UNGRAINED—GRAINED—REGRAINED

LITHOGRAPHIC PLATE GRAINING CO.
OF AMERICA INC.

37-43 BOX STREET., BROOKLYN, N. Y. EVERGREEN 9-4260, 4261

GOOD INKS AS YOU LIKE THEM

Color strength and brilliance plus uniformly good press working properties make Sinclair & Carroll inks the choice of leading lithographers throughout the country. In pressrooms, large and small, these inks are winning new friends and proving their all around dependability.

Sinclair & Carroll inks are carefully supervised in their manufacture by men whose lifetimes have been spent not only in supplying your standard ink requirements, but also in developing and improving your inks to their present high standard.

Try Sinclair & Carroll inks on your next job. You will like them for the work they do. We will welcome the opportunity to serve you.

SINCLAIR & CARROLL CO., Inc.

LITHO INKS OFFSET

591 ELEVENTH AVENUE, Tel. BRyant 9-3566
NEW YORK CITY

CHICAGO	LOS ANGELES	SAN FRANCISCO	NEW ORLEANS
440 W. Superior St.	417 E. Pico St.	345 Battery St.	518 Natchez St.
Tel. Sup. 3481	Tel. Prospect 7296	Tel. Garfield 5834	Tel. Main 4421

New Pamphlet by Mertle

G. Cramer Dry Plate Co., St. Louis, has just issued "Direct Halftone Color Photography" by J. S. Mertle, A.R.P.S. This brochure, devoted to the technology of direct halftone color photography, is another of the well known technical publications issued periodically by the G. Cramer Dry Plate Co. The author briefly reviews the history of color photography and then delves into the practical application of color separation technique combined with the halftone process. In the opinion of the author, direct halftone color photography has been neglected in favor of the "indirect" method. Some of the erroneous notions regarding the supposed limitations of the direct method are corrected and clarified. The latest developments in photographic materials and camera equipment that justify a return to the direct method of color separation are also discussed. Up-to-date working methods are outlined. Brief but thorough discussion of filter factors, halftone technique, screen angles, development technique, etc., make this booklet a valuable source of information for novice and expert alike. Mr. Mertle's remarks about the application of the gray scale (graded density strip) are commendable especially in view of the erroneous manner in which the gray scale is relied upon by color workers.

Written in a manner that lays bare the pertinent facts of the process, this booklet is an easily accessible form of reference and should contribute in no small measure to the progress of the industry.

•

Sorg Suffers Fire Loss

Sorg Paper Co., Middletown, O., suffered a severe loss from fire early last month. Louis Ritz, an official of the company, said the loss included large stores of Norwegian and Finnish pulp, no longer available because of war conditions abroad. More than 100 men, including company employees, fought the fire for many hours.

•

Cincy Club Hears Weymouth

The importance of research work to make eye appeal in printing more effective was stressed in an address before the Cincinnati Club of Printing House Craftsmen last month by Fred A. Weymouth, of the Chicago branch of International Printing Ink Corp. Mr. Weymouth also discussed improvements in methods of ink drying, and went into considerable detail on the subject of pigment improvement. "The possibility of lithographic heat drying inks," he said, "has been demonstrated in a number of commercial experiments. However, these inks should be considered in the development stage."

Considerable interest was also shown in a research bulletin distributed at the meeting by Charles K. Pigman, of the research committee, asserting that out of a dozen printing exhibits recently examined, all required microscopic analysis to determine the processes by which they were produced. In the absence of President Walter Sooy, John M. Callahan, of the United States Printing and Lithograph Company, presided at the meeting. Announcement of the organization's plant visit to the Champion Paper Company, at Hamilton, Ohio, on October 31 was made. Recently, the officers and governors of the Club, were guests of Harvey Seybold, of Seybold Paper Company, at his 20-acre estate in Amberly, near Cincinnati.

•

Ad Club Visits Western Litho

The Racine (Wis.) Advertising Club was a guest of Western Printing & Lithographing Co. at the latter's plant last month in Racine. Elmer G. Voigt, vice-president and superintendent of Western, in a brief address before the visitors, attributed the growth of the firm to a policy of not only keeping in step with modern business methods, but also trying to get a little ahead of them. Production figures, he said, reveal that Western now uses almost 800,000 square feet of floor space to carry on its varied operations. The firm spends $2,500,000 annually for paper stock, $100,000 annually for ink. It produces 7,000,000 decks of playing cards annually. Over 85,000,000 greeting cards and 1,250,000 Bibles and testimonials will be produced this year, he told the visitors.

Following a tour of the plant, the club was shown a motion picture recently produced by the firm dealing with the steps involved in making four-color process offset plates. The picture is the first of a number of proposed movie films which will show production steps throughout Western's plant. Don Black furnished the narration for the film.

•

Article on Point-of-Purchase

Chicago Cardboard Co., is distributing a booklet entitled "Point-of-Purchase Advertising, Its Place in a Rounded Advertising Program." This is a reprint of a talk delivered by H. P. Simons before the Chicago Federated Advertising Club recently and which subsequently appeared in the June 1940 issue of MODERN LITHOGRAPHY. Copies of the booklet are available on request.

LEGAL NOTICE

STATEMENT OF THE OWNERSHIP, MANAGEMENT, CIRCULATION, ETC., REQUIRED BY THE ACTS OF CONGRESS OF AUGUST 24, 1912, AND MARCH 3, 1933

Of Modern Lithography, published monthly at New York, N. Y., for October 1, 1940.

State of New York } ss.
County of New York }

Before me, a notary public in and for the State and county aforesaid, personally appeared Grant A. Dorland, who, having been duly sworn according to law, deposes and says that he is the Business Manager of the Modern Lithography and that the following is, to the best of his knowledge and belief, a true statement of the ownership, management (and if a daily paper, the circulation), etc., of the aforesaid publication for the date shown in the above caption, required by the Act of August 24, 1912, as amended by the Act of March 3, 1933, embodied in section 537, Postal Laws and Regulations, printed on the reverse of this form, to wit:

1. That the names and addresses of the publisher, editor, managing editor, and business managers are: Publisher, Photo-Lithographer, Inc., 254 W. 31st St., New York, N. Y., Editor, Richard Roley, 254 W. 31st St., N. Y. C. Managing Editor, none. Business Manager, Grant A. Dorland, 254 W. 31st St., N. Y. C.

2. That the owner is: (If owned by a corporation, its name and address must be stated and also immediately thereunder the names and addresses of stockholders owning or holding one per cent or more of total amount of stock. If not owned by a corporation, the names and addresses of the individual owners must be given. If owned by a firm, company, or other unincorporated concern, its name and address, as well as those of each individual member, must be given.) Photo-Lithographer, Inc., 254 W. 31st St., New York, N. Y. Ira P. MacNair, 254 W. 31st St., N. Y. C. Grant A. Dorland, 254 W. 31st St., N. Y. C. Wayne E. Dorland, 254 W. 31st St., N. Y. C.

3. That the known bondholders, mortgagees, and other security holders owning or holding 1 per cent or more of total amount of bonds, mortgages, or other securities are: (If there are none, so state.) None.

4. That the two paragraphs next above, giving the names of the owners, stockholders, and security holders, if any, contain not only the list of stockholders and security holders as they appear upon the books of the company but also, in cases where the stockholder or security holder appears upon the books of the company as trustee or in any other fiduciary relation, the name of the person or corporation for whom such trustee is acting, is given; also that the said two paragraphs contain statements embracing affiant's full knowledge and belief as to the circumstances and conditions under which stockholders and security holders who do not appear upon the books of the company as trustees, hold stock and securities in a capacity other than that of a bona fide owner; and this affiant has no reason to believe that any other person, association, or corporation has any interest direct or indirect, in the said stock, bonds, or other securities than as so stated by him.

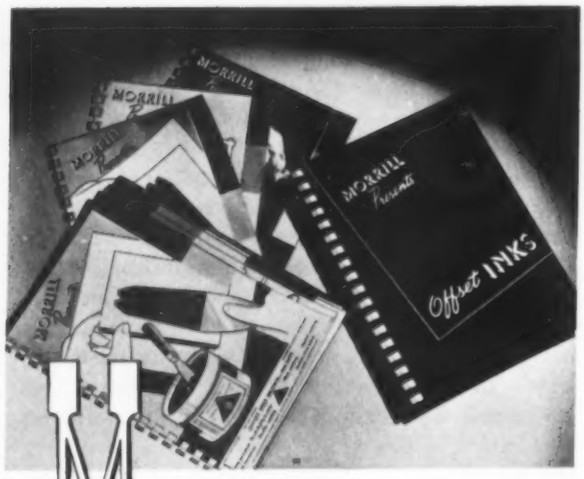
5. That the average number of copies of each issue of this publication sold or distributed, through the mails or otherwise, to paid subscribers during the twelve months preceding the date shown above is. (This information is required from daily publications only.)

GRANT A. DORLAND,
Business Manager.

Sworn to and subscribed before me this 20th day of September, 1940.

[Seal] SAMUEL NEWMARK.

Notary Public, Nassau County, Nassau County Clerk's No. 1826. Certificate filed in New York County. Co. Clerk's No. 158. Reg. No. 2-N-87. (My commission expires March 30, 1942.)



Morrill presents

A CENTENNIAL OF PROGRESS

specializing in

OFFSET INKS

In celebration of our One Hundredth Anniversary, Morrill presents to the industry a series of specialized color books. Specific inks on specific stocks for specific presses! Solve your color and pressroom problems by referring to this particular book or the rest of the series which you may have on request. Essential qualities and characteristics of the inks are identified. Write for any of these which fit your specialty: Morr-Glos Label inks, Offset inks, Sil-vor-Plate inks, Corrugated and Fibreboard inks, Morr-Glos Carton inks, Cotton Bag and Burlap inks, Halftone Blacks and Process inks.

MODERNIZE WITH MORRILL

GEO. H. MORRILL CO.

Division · General Printing Ink Corporation

100 SIXTH AVENUE, NEW YORK, N. Y.

Boston · Philadelphia · Chicago · Detroit · St. Louis · Fort Worth · Minneapolis · San Francisco · Los Angeles · Seattle

• HUNT

OFFERS A COMPLETE LINE OF CHEMICALS for the LITHOGRAPHER

Listed below are twelve of our most widely used chemicals for the Lithographic Industry. Like all Hunt products they are carefully pre-tested and of such uniform quality that they always give the same results. Complete catalogue and price list on request.

Glycerine C.P.

Hydroquinone

Rubber Solution

Negative Collodion

Stripping Collodion

Gum Arabic Selected

Litho Developing Ink

Edible Hen Egg Albumen

Paraformaldehyde U. S. P.

Sodium Carbonate Photo Pure

National Photographic Carbons

Sodium Sulphite Anhydrous Photo

PHILIP A. HUNT COMPANY

ESTABLISHED 1909

BROOKLYN, N.Y. CHICAGO, ILL.

CAMBRIDGE, MASS. CLEVELAND, OHIO

Coated Paper

(*from page 36*)

of the ink more sparingly, will generally solve the problem.

Ink tackiness varies greatly with temperature. Ink run on a cold press on a cold morning during the winter will be much more tacky than it will be after several hours of running in the increasing warmth of the pressroom. Consequently an excellent paper may pick on a cold morning because of the undue tackiness of the ink and, therefore, the paper should not be condemned until warmth modifies the tackiness of the ink. If warmth doesn't eliminate the picking an ink maker should be requested to reduce the tack in the ink, or to supply an ink with less tack, and if the picking persists after the ink is reduced the paper should be tested on another form or with wax.

PRESENT-DAY coated papers are not tender and should not pick. Now and then a tender lot of paper gets delivered from one mill or another, but this happens seldom and picking is a rather uncommon complaint. When picking occurs, the coating of the paper is pulled away from the fibers and the holes can be seen with a good magnifying glass. In some instances one can feel the holes by rubbing the tips of the fingers over the picked surface. However, most exhibits of picking when examined under a glass will show no holes and consequently no evidence whatever that picking has occurred, because most of the troubles called picking are not picking at all but are the effect of dust and dirt.

Dust and dirt, gathering on the surface of sheets of paper, will cling to the surface until the printing form deposits the ink, after which the dust and dirt will be pulled away from the sheet by the offset blanket. And wherever the dust particles are pulled away from the paper they leave the paper clean where they have been and those tiny white specks of clean paper show in the print, and present an appearance similar to that of picking. However, under a glass the coating can be seen and no holes will be apparent. Dust and dirt can attach to paper either in a paper mill or in a printing plant, and it is always difficult to determine where it became attached. The odds are about 70 to 30, nowadays, that the dirt originated in the printing plant.

There is one less common form of dirt, however, that comes from the paper mill and from nowhere else, and that is called calender scales. Calender scales are small particles of pigment that occasionally gather on calender rolls and are pressed onto the paper during calendering. These scales, like dirt, will pull off after impression and leave white specks on clean paper showing through the print. Calender scales can be easily detected by examining unprinted sheets. The scales will show as small gray specks and these can be scraped off with a finger nail.

Stretching of paper is a common cause of trouble in color printing, because the stretching of the sheet makes it difficult to obtain register with the first color. Similar trouble can be caused by the shrinkage of paper, but that rarely occurs because shrinkage commonly evidences itself by causing the paper to curl. Paper coated on one side will curl sometimes because the uncoated side will shrink more readily than the coated side. Coated one side paper, therefore, will tend to curl toward the uncoated side; however, the draw will be across the grain and the curled-up edges will parallel the grain. In rare instances the paper will curl cross-wise with the curled-up edges running at right angles to the grain. Such a contrary curl might occur if a case of straight-grain paper is permitted to stand on end long enough for the paper to sag and to take on a permanent bend or curl. Such a curl sometimes appears in heavy-weight papers that have been wound near the core.

The only efficient way to prevent paper troubles of curling or wave edges is by air-conditioning the paper storage room and the pressroom, and by installing paper-hanging racks so that the sheets of paper may be exposed to the air before printing. Most of the paper and printing troubles that result from humidity conditions occur when the relative humidity is above 50% or below 35%. These troubles are not due to the fact that the relative humidity is extremely high or extremely low, but to the fact that the moisture in the air is considerably higher or lower than the moisture content in the paper that is being used.

Heretofore, all efforts to eliminate humidity difficulties in pressrooms have involved methods designed to bring paper into exact balance with the air in the rooms. The most successful of these efforts has been the practice of hanging paper in small lifts so that the sheets thus exposed might take on or give off moisture until in balance with the air in the pressroom. This practice has been proved advantageous in lithographic plants, but it has also been proved inadequate. And, of course, it is an expensive practice.

The advantages of the practice of hanging paper in small lifts are:

(*a*) It permits paper to stretch or shrink *before* it goes on the press.

(*b*) It reveals tendencies to curl, cockle or dimple *before* the paper goes on the press, and so permits the lithographer to replace the paper, and thus avoid troubles on the press.

The inadequacies of the practice of hanging are:

(*a*) Paper that is in exact equilibrium with a pressroom will not perform as well in the moist condition that exists on an offset press as paper that is somewhat more moist than the air in the room. Studies made by the United States Bureau of Standards prove that paper performs best on an offset press when the paper is adjusted *above* the room condition. Such an adjustment cannot be made by hanging paper in the pressroom.

(*b*) The practice of hanging does not prevent or correct cockling and dimpling which occur frequently in ordinary lithographic papers. The ordinary methods for manufacturing lithographic papers produce unequal tensions in various parts of a web of paper, and the unequal tensions cause the sheets of paper to cockle and to dimple when they absorb moisture while hanging. Hanging reveals this difficulty and saves press trouble, but does not correct the fault and does not prevent delay and consequent loss.

(*c*) The practice of hanging paper does not prevent or correct curling. It will reveal a tendency to curl, and so permit a lithographer to avoid running the paper, but it will not compensate him for the loss that results from the delay that follows.

(*d*) The equipment, floor space, and labor required for hanging paper represent an expense that adds appreciably to cost.

Thus the hanging of paper for adjustment to pressroom atmosphere may be described as a practice that has been beneficial and economical. But, it has

(*Turn to page 61, 3rd col.*)

RELIABLE LITHOGRAPHIC PLATE CO., Inc.

The Pioneer Plate Grainers of America

ALL PLATES

INCLUDING THOSE REGRAINED FOR MULTILITH

ARE MARBLE GRAINED

"RELIABLE" is far more than just part of our name. It means to our customers that our plates can be depended on to give first-class results because from start to finish the graining is handled by experts of long experience. Our plates are made right to work right—*they are reliable!*

We carry a full supply of Zinc and Aluminum Sheets for Offset, Rotaprint Presses, in fact for all the lithograph trade.

MILL SELECTED METAL USED EXCLUSIVELY

(MADE IN U.S.A.)

A trial order should "sell" you our services and products.

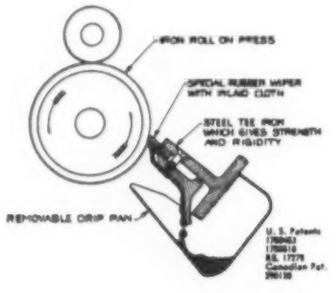
RELIABLE LITHOGRAPHIC PLATE CO., Inc.

INCORPORATED 1916

17-27 Vandewater St. *and* 45 Rose St., New York, N. Y. • Phone: BEekman 3-4542 / 3-4531

INTERNATIONAL PRESS CLEANERS

are daily demonstrating their efficiency in increasing Output and Lowering Production Costs


IRON ROLL ON PRESS
SPECIAL RUBBER WIPER WITH INLAID CLOTH
STEEL TIE IRON WHICH GIVES STRENGTH AND RIGIDITY
REMOVABLE DRIP PAN

THIS IS OUR METHOD OF REMOVING INK FROM PRESS

We invite you to take advantage of our thirty day trial offer. If interested write and let us know the size and make of your press.

INTERNATIONAL PRESS CLEANER & MFG. CO.

112 Hamilton Ave.

Cleveland, O.

A trial will sell when the product is

OKAY

Therefore we urge every lithographer to send for samples of —

OKAY DEVELOPING INK

A time tested material with every quality a developing ink should have — also made for deep etch plates.

OKAY OPAQUE

The finest negative opaque on the market — consistency and satisfaction assured.

MASKING OPAQUE

A recent development, a water soluble opaque for masking on celluloid sheets; smooth flowing and non-sticking in humid weather.

REX OPAQUE (Red)

An opaque for paper films and glass, will not chip or crack, and dries rapidly.

All of these photo-offset specialties are manufactured and distributed only by

F. G. OKIE, Inc.

247 S. THIRD ST., PHILADELPHIA, PA.

or their agents. Also manufacturers of high-grade photo-offset inks, fine printing inks, compounds, etc.

Halftone Technique

(*from page* 31)

speed of the lens, therefore, by reversing the order of the mathematics, the correct aperture would result. By dividing the focal length by the f numbers we obtain the following diameter values for the 24" lens quoted.

f. 11 = 2.18 inches
f. 16 = 1.5 "
f. 22 = 1.09 "
f. 32 = .75 "

Our previous calculations revealed that a diameter of 1.12" is the proper stop to use for 2 x enlargment with a 24" lens using the 64 ratio. The above table shows that when set to f. 22 this particular lens has an effective aperture of 1.09 inches. This diameter is sufficiently close to 1.12 to ignore the slight discrepancy. The proper aperture for the camera setting cited may be fixed at f. 22. Similar calculation will establish the correct aperture for the entire scale of reduction and magnification. These computations need only be worked out once. In the case of diameters which fall somewhere between two f numbers, the operator can make satisfactory approximations by interpolation. The accompanying chart (Figure 4) is based on similar equations.

Having coordinated the camera in accordance with the requirements, the actual halftone technique is chosen with regard for the following items.

(1) The type of halftone desired.

(2) The character of the film or plates used.

(3) The tone range of the copy.

The first two items are so variable that the writer feels it foolhardy to give any concrete advice regarding them. The dot structure desired in different processes, or by different workers in the same field is so varied that the factors involved must be determined by the individual operator according to his needs. The great variety of process films and plates available make it impossible to offer any instruction which would be universally satisfactory.

ASIDE from color, copy has two important characteristics—power of reflection and contrast. The quantity of light reflected by the copy determines the length of the exposure given. The contrast of the copy determines the halftone technique to be employed (one-stop or grouped-stop systems). Photographs on glossy, semi-gloss and smooth matte surfaces reproduce well and are listed in the order of decreasing reflective power. Rough-surfaced photographs on linen or canvas-finished papers will show a scattered array of tiny, white flecks in the halftone due to the irregularities of the paper surface being accentuated by the arc lights. From the standpoint of monotone work, faded photographs, sepias, hand colored photographs, copy on discolored stock, etc., are difficult to reproduce and never come out with the same tone values that are seen in the original despite corrective efforts with filters and color sensitive emulsions. The screen ruling also influences the suitability of copy. Dull, flat copy is not satisfactorily reproduced with coarse screens. Copy for the coarser screens should be brilliant, not necessarily contrasty, but with a sharp distinction between the various tones of the subject. Full-scaled copy, rich in detail, reproduces best with finer screens. Copy should preferably be analyzed by means of a reflection densitometer to ascertain the brilliance of the paper stock as well as the contrast range of the subject. In the absence of such an instrument, the operator must make visual determinations. Copy should be classified under the following considerations;

(a) Reflective power of the base.

(b) Reflective power of the tone media.

(c) Contrast range of the subject.

(d) Color of the image.

(e) Color of the base.

(f) Paste up jobs.

(g) Retouched copy.

Experience will soon teach the operator into what category copy belongs. It remains but to apply the required technique.

Two general systems of halftone procedure may be employed—the one-stop method and the grouped-stop system. The one-stop method is capable of giving a very close approximation to correct tone rendering from suitable copy. Only when copy deviates from the standard is it necessary to engage in the grouped-stop systems. The single-stop system should therefore be considered the nucleus of all halftone technique. From this main or central exposure the photographer can branch out and give additional partial exposures at smaller or larger stops to bring unsuitable copy within the tonal range required by his process.

One-Stop System

Bright and full-toned copy with clean, white highlights but without excessive black shadows will reproduce satisfactorily by means of a single exposure (in addition to the flash). The diameter of the stop is chosen in regard to the ratio used for setting the screen distance. The exposure is based on the speed of the film, the strength of the lights, the reflective power of the copy, and the time necessary to get an accurate reproduction of the middletones. With selected copy, and an adequate middletone exposure, the highlights and shadows will automatically assume their proper size.

Group Stop Exposure

In the case of flat copy lacking in contrast it is often impossible to get a satisfactory rendering of the highlights by a single exposure. When the exposure is prolonged to build up snap in the highlights, the gradation values of the shadows and middletones are usually destroyed. Hence, it becomes necessary to treat the highlights of such copy independently of the middletone exposure. When the lens stop is opened more and a slight exposure given, the brightest parts of the picture influence the formation of the halftone to a greater extent than the less bright areas. Thus, it is possible to give the highlights additional exposure, by opening the lens one f number, giving an exposure not in excess of ½ of the main exposure, without materially affecting the dot size of the middletones.

Conversely, copy with excessive black shadows will usually be overexposed for the highlights if the single-stop exposure is lengthened to bite into the shadows. By reducing the size of the lens opening by one f number, additional exposure may be given which will retain shadow detail without altering or destroying highlight and middletone values.

Retouched copy presents many diverse problems that demand deviation

(*Turn to page* 55)

A
CRAMER
PLATE

FOR EVERY
Reproduction
NEED

SUPER CONTRAST • CRACO LITH
PANCHROME • CONTRAST
CRAMER "25" • ALPHA

PANCHROME PROCESS

G. CRAMER DRY PLATE CO.
New York ST. LOUIS Chicago

"SULLEBARGER"

for

HARRIS
DEEP ETCH CHEMICALS

CAMERAS
SCREENS
LENSES
ARC LAMPS
VACUUM FRAMES
WHIRLERS
SUPPLIES

E. T. SULLEBARGER CO.
110 FULTON STREET NEW YORK, N. Y.
538 SOUTH CLARK STREET CHICAGO, ILL.

STANDARD LITHO
GRAINING CO.

We Specialize in

ZINC and ALUMINUM
PLATES

UNGRAINED - GRAINED
REGRAINED

A Trial Order Will Convince

1432 E. 49th St. CLEVELAND, OHIO
Telephone: HENDERSON 0811

BLANKET STREAKS?
SEND *for* FREE FOLDER
CAUSE & CURE of BLANKET STREAKS

CYLINDER TRUING
WITHOUT DISMANTLING

C. W. LATHAM
6 LAFAYETTE AVE., BKLYN., N. Y.

Halftone Technique

(*from page* 53)

from the standard technique. So do paste-up jobs. Copy in which the highlights have been accentuated and the shadows darkened will have a variety of intensity values—the abnormal reflection by the highlights, the normal reflection of the middletones, and a high absorption of light by the black shadows. Such copy may necessitate the use of a small stop (detail) for the main exposure. In such cases the normal (one-stop) exposure aperture becomes the highlight stop, and the detail opening is the main exposure stop. Certain copy demands the use of both highlights and detail exposures in addition to the central exposure to effectively maintain continuity of the tone scale.

Many attempts to rectify poor copy by retouching results in an unbalanced scale of tones. When screening such copy it is often impossible to retain tones on one end of the scale without destroying or altering the tones at the other end. Here the corrective measures possible with intensifiers and reducers will prove of unlimited advantage. When the tone scale of a screen negative is of the required value, but the dots lack maximum density, the intensifier will in most cases produce the necessary opacity, thus saving the negative. Retouched highlights may overexpose in the time necessary to obtain the middletones, and these may be cut down by a local or over-all application of reducer.

Intensification and reduction should also be considered a part of halftone technique. In many cases, what cannot be accomplished in the camera, can be achieved by means of these easily compounded and easily applied solutions. Many makeovers could be avoided by a judicious use of these two chemical aids.

The operator should always be generous rather than stint in exposure time. The slightly larger dots produced by over-exposure (if not excessive) can easily be corrected by treatment in Farmer's solution or the like. With underexposure, however, the dots will lack proper size as well as opacity, and the tone scale is usually distorted. While intensifiers can rectify the opacity, very little if anything can be done to overcome the distortion of dot size and gradation. Attempts to increase the periphery of halftone dots by chemical means have been either unsuccessful or entirely unsatisfactory.

Flashing should be considered an integral part of halftone exposure regardless of the system employed. Although flashing affects every dot in the negative, when proper stop and exposure are used, the resultant dots will be buried within the larger middletone and highlight dots. Flashing, if not excessive, will leave unaffected the gradation value of the negative and will provide a hard core in all dots. This is especially desirable if dot-etching is contemplated. Only in the case of copy decidedly lacking in contrast should the flash exposure be omitted. Great care should be given the matter of development. Many cases of poor halftones can be attributed to faulty development.

The development process should not be considered as a point where corrections for errors in exposure or technique may be made. Exposure and development of halftone negatives should be "full." Over-exposure with short development will produce a weak silver density that may print through, and certainly upon etching will lose its opacity. In the case of under exposure with prolonged development, fog, and a blocking up of the highlights will result. The shadows will be weak and upon etching extreme contrast will be produced.

Halftone work is not at all difficult but it is exacting. When the operator takes into account the variables and makes due compensation, a lot of the doubt and mystery is removed. It is obvious that once this system is mastered and all of the factors coordinated, screen negative making becomes a less uncertain procedure and the operator can devote more time to those parts of the process which are not capable of such automatic standardization.

•

New Book on Direct Mail

Harper & Brothers, New York, have just published "Direct Mail Advertising and Selling", by Frank Egner and L. Rohe Walter, a comprehensive, easy-to-use manual by two acknowledged experts which discusses in detail every phase of direct-mail advertising. The merchandising principles, practices and procedures described in the book are based on actual experience with mail-order selling and direct-mail promotion in a wide variety of firms. All the elements of successful sales strategy and the methods of applying them are reduced to specific rules together with many examples of their use.

When and how to use direct mail to increase the pulling power of advertising in newspapers, in periodicals, in car cards, over the radio, in window displays; what four points to consider in determining the proper sales approach; what factors are important in the physical form and combinations of direct-mail literature; what nine points to use in checking the suitability of art work and layouts; how to build and maintain a list; how to write a campaign; postal hints; appropriations;—these are some of the chapter headings, including a chapter of direct-mail case histories.

Frank Egner is manager of the Mail-Order Department of McGraw-Hill Book Company. He is well known as a lecturer on direct mail and as a contributor to such journals as *Printers' Ink* and the *Mail Order Journal*. L. Rohe Walter is advertising manager of the Flintkote Company and president of the Direct Mail Advertising Association. He is also well known as a lecturer and contributor to advertising journals. "Direct Mail Advertising and Selling" is priced at $3.00.

•

Morrill Issues Ink Selector

George H. Morrill Co., division of General Printing Ink Corp., New York, has just issued a sample book demonstrating halftone blacks and process colors. Some ten or more blacks are illustrated, each printed on the same stock and from the same engraving so that the results of using a toned black, for example, can be compared with results of using an untoned black; a satin finish can be compared with a dull finish, etc. This new book is the eleventh in a series on specialized inks Morrill has issued during the current year. Copies available.

DRISCOLL'S

Coverwell

INKS

OFFSET
LETTERPRESS
ANILINE

MARTIN DRISCOLL & CO.
610 FEDERAL STREET · CHICAGO, ILLINOIS
BRANCH PLANT IN MILWAUKEE, WISCONSIN

GOERZ

American-Made
LENSES
for Photolithography
"The Most Exact Tools"

ARTAR APOCHROMAT
f:9 to f:16

The ideal lens for color separation negatives. Color-corrected to produce images of the same size, to correctly superimpose in the finishing process. Focal lengths: 12 to 70 inches. New sizes 4" and 6" for color separation blowups from 35 mm. Kodachrome.

GOTAR ANASTIGMAT
f:6.8, f:8, f:10

Assuring freedom from distortion, this is the ideal lens for intricate subjects requiring an intense clarity of definition. Focal lengths: 8¼ to 24 inches.

GOERZ PRISMS

of the Highest Accuracy — For reversed negatives to save stripping the film, and reduction work.

For FREE literature address DEPT. P L 11

C.P.GOERZ AMERICAN OPTICAL CO.
317 EAST 34TH ST. NEW YORK CITY

American Lens Makers since 1899

BEN DAY, Inc.

TRADE MARK
THE BEN DAY · RAPID SHADING MEDIUM
REG. U.S. PAT. OFFICE

118 East 28th Street, N. Y.

Now Available!

The Textbook of PHOTOGRAPHY and PLATEMAKING for PHOTO-LITHOGRAPHY

The standard textbook used by the Chicago School of Printing and Lithography.

280 pages of easy to understand, step-by-step procedure for every operation from copy to the completed plate. Some of the subjects covered are . . .

PHOTOGRAPHY: The chemistry of photography and formulas; The procedure for making Wet and Dry Plate Negatives; Filtering; Halftones; Screen Separations; Drop-Outs. PLATEMAKING: The chemistry of lithographic printing; Albumin platemaking; with formulas and procedure; Deep-etched plates by the gum or glue processes; Blue prints and other direct printing processes. Hydrometer control; pH control, etc. ***Price $5 with order.***

Modern Lithography
254 W. 31st Street New York, N. Y.

LITHOGRAPHIC ABSTRACTS

Abstracts of important current articles, patents, and books, compiled by the Research Department of the Lithographic Technical Foundation, Inc. These abstracts represent statements made by the authors of articles abstracted, and do not express the opinions of the abstractors or of the Research Department. Mimeographed lists have been prepared of (1) Periodicals Abstracted by the Department of Lithographic Research, and (2) Books of Interest to Lithographers. Either list may be obtained for six cents, or both for ten cents in coin or U. S. stamps. Address the Department of Lithographic Research, University of Cincinnati, Cincinnati, Ohio.

Photography and Color Correction

Photo-Textyping Processes. J. S. Mertle. *Advertising and Publishing Production Yearbook*, 6, 1940, p. 285. Details of the better known photo-typesetting machines are presented in chart form.

Direct Color Photography for Offset. J. White. *National Lithographer*, 47, No. 9, Sept. 1940, p. 36. Glass separation positives or negatives are the best possible copy for half-tone reproduction if the finest results are desired. Color film is best for candid camera shots, action work, and aerial photography. In making direct color separations, a studio or view camera, a tricolor repeating back camera, and a one-shot color camera are each indispensable for a certain type of work.

Transparent Impressions for Offset Reproduction. E. O. Vandercook. *National Lithographer*, 47, No. 9, Sept. 1940, p. 34. The Monsen system of making transparent impressions for offset reproduction is outlined. A cellophane that will readily take ink, an absolutely opaque ink, and a proving press to meet the special requirements of the process have been developed. Elimination of a photographic operation is effected, and more accurate prints and reduced costs are claimed.

Multigrade: A New Printing Paper. F. F. Renwick. *Photographic Journal*, 80, August 1940, pp. 320-5. Multigrade paper is coated with an emulsion, part of which is not color sensitized and is soft in gradation, while the remainder is sensitized to the blue-green region of the spectrum and is very contrasty. To secure a desired contrast, the extent to which each component is affected during exposure is regulated by using a printing light of suitable spectral composition. The use of mercury vapor lamps is not recommended. Care must be taken to prevent fogging by safelights. Methods and devices using four specially made filters, designed to facilitate control of the composition of the printing light, are described.

Process Practice (No. 8). F. H. Smith. *Process Engravers' Monthly*, 47, No. 560, Aug. 1940, pp. 270-1. The screen distance indicator on the camera is likely to be incorrect as the thickness of the cover glass varies from screen to screen. Methods of measuring actual screen distance using a wedge or a rule are illustrated. If the cover glass thickness is not known, it can be accurately determined by means of a microscope. A method of finding screen distance when one or two stops of fixed size are used, involving the use of a strip of paper of a certain length mounted beside the copy, is described in detail. The length of the strip to be used may be determined experimentally or may be calculated from either of two formulas: (1) when the "f" number of the stop or stops is known, or (2) when the diameter of the stop or stops and the focal length of the lens are known.

Highlight Halftone Negatives. J. S. Mertle. *Graphic Arts Monthly*, 12, No. 8, Aug. 1940, pp. 38, 40, 42, 44, 46, 48; No. 9, Sept. 1940, pp. 40, 42, 44, 46, 48. Methods of producing highlight half-tone negatives using the following principles are described: (1) the use of a supplementary exposure with the half-tone screen displaced, (2) the use of a series of very short exposures, (3) an indirect method involving the production of a continuous-tone negative, a collodion half-tone positive, and a contact negative on dry plate, (4) the use of specially shaped stops (eared, excenter, cross), and (5) the Bassani process, based on a slight rotation of the half-tone screen during part of the exposure.

Making Masks for Prints from Kodachrome. J. E. Wilson. *Photo Technique*, 2, No. 9, Sept. 1940, pp. 64-6, 76. The author describes a variation of the Gevaert masking method of making separation negatives from Kodachrome. The results of his method of operation are substantiated by sensitometric measurements made on the separation and masking negatives.

The Densitometer Applied to Color Photography. Anonymous. *Photo Technique*, 2, No. 9, Sept. 1940, pp. 24-9. A detailed discussion is given of the use of the densitometer in making separation negatives from color transparencies, directly from studio set-ups, and out-of-doors in daylight. After a study of the density range of the printing medium, the filter exposure factors must be determined, the film must be so exposed that the linear portion of the characteristics is used, and the density range of the transparency must be compressed so that the negatives can be printed by the desired medium. The densitometer is useful in determining the gamma to which the negatives are to be developed, and in printing the separations.

Film Characteristics. B. Dudley. *Photo Technique*, 2, No. 8, Aug. 1940, pp. 51-7. Dudley deals with the use of filters and the effect which filters and light sources have on the shape of the characteristic curves of film materials. In general a filter not only reduces the total amount of light reaching the film, but also affects the contrast. These factors are discussed and methods for determining the correct filter factors for individual laboratory and processing conditions are given.

Cantine's

LITHOGLOSS

Coated one side—deluxe grade. For labels, boxes and displays, with regular or gloss inks and bronzing. Varnish quality.

ZENA OFFSET

Coated two sides. Gives lithographed direct mail brilliance and sparkle. Surfaced for regular offset or gloss inks and varnish.

CATSKILL LITHO

Coated one side. For labels and general production work at lowest cost for Cantine quality.

Ask Your Cantine Distributor for Samples

The MARTIN CANTINE Company
SAUGERTIES, N. Y.

Specialists in Coated Papers since 1888

ILLINOIS ZINC

Superior Quality
UNGRAINED
ZINC
OFFSET PLATES
for
ALBUMEN OR DEEP ETCH PROCESS

Rolled Under Rigid Technical Control with a Background of 70 Years Experience

Specify Illinois Zinc Plates thru any litho supply house or grainer in United States or Canada

ILLINOIS ZINC COMPANY
ESTABLISHED 1870
Sales Offices
CHICAGO — 2959 W. 47th St.
NEW YORK — 630 Fifth Avenue

REGARDLESS of CONDITIONS ABROAD!

The Full Line of
ILFORD
PANCHROMATIC and NON-PANCHROMATIC
DRY PLATES and FILMS
ARE BEING SUPPLIED!

—and we have every assurance they will continue to be as in normal times.

OUR STOCKS ARE COMPLETE
and "turn-over" is regular as in peace times.

WE SHIP SAME DAY ORDER IS RECEIVED!

Photo Supplies
NORMAN-WILLETS CO.

Mid-West Depot
316 W. Washington St.
CHICAGO, ILLINOIS

Eastern Depot
10 West 33d Street
NEW YORK, N. Y.

U. S. Offers:

The most *complete*
finishing service
available—

VARNISHING
LACQUERING
MOUNTING
DIE CUTTING
TIN MOUNTING
GUMMING
HEAT SEAL ADHESIVES
HOT MELT ADHESIVES
GREASEPROOF COATINGS
MOISTURE-VAPOR RESISTANT COATINGS

Your correspondence on any finishing problem will have our prompt and careful consideration.

U. S. FINISHING & MFG. CO.
775 WEST JACKSON BLVD. — CHICAGO, ILLINOIS

Planographic Printing Surfaces and Plate Preparation

Albumin Printing Technique. M. Leeden. *Modern Lithographer and Offset Printer*, 36, No. 7, July 1940, pp. 85-6. It is not likely that albumin plates will be entirely replaced by deep-etch. Plates should be grained to a fine deep grain, and should be cleaned thoroughly and gummed before storing. Before coating, the plates should be cleaned with weak hydrochloric or acetic acids, and counter-etched. Simple coating formulas using a reputable grade of dried egg albumin are best. Time is saved in making up coating solutions by having on hand stock solutions of albumin and bichromate. The concentration of the albumin solution should be checked with a hydrometer.

Some Notes on Platemaking. I. H. Sayre, MODERN LITHOGRAPHY, 8, No. 9, Sept. 1940, pp. 43, 46, 85. The recommendation of the Lithographic Technical Foundation that the density of all solutions be measured with a hydrometer should be universally adopted. Whirler temperature and speed, and plate exposure should also be carefully controlled. A chart showing increase in exposure time with rise in relative humidity is given. Albumin plates may be desensitized and the image preserved by applying deep-etch coating solution after development, and exposing, or by the use of bichromated gum. There are a number of hardening solutions which may be used to strengthen an albumin plate. The method and formulas for a positive reversal process using Vandercook transparent impressions are given.

Paper and Ink

The Standardization of Lithographic Varnishes. J. J. Mattiello *American Ink Maker*, 18, No. 9, Sept. 1940, pp. 55, 57, 59, 61, 63, 65. The author is in complete agreement with the work of the Varnish Standardization Committee of the Printing Ink Production Club in standardizing varnish viscosities. The thin, medium, heavy, and very heavy varnishes are discussed as to shortness, wettability, flow, length, and tack. The adaptation of the Committee's viscosity standards, which are an acceptable compromise between previously recommended standards and current industrial practice, should cause difficulty to no one. The relations of acid number, iodine number, specific gravity, refractive index, and saponification number to viscosity, for processing the oils at three different temperatures in air and vacuum, are shown in graphical form.

Protective and Gloss Coatings. F. Fasullo. *Advertising and Publishing Production Yearbook*, 6, 1940, pp. 273-4. The composition, application, ink and paper requirements, and moisture and grease resistance of overprint gloss varnishes, spirit varnish, nitrocellulose lacquer, paraffin coating, laminating materials, waxprint coat, and gloss inks are outlined.

Conditioning Paper. J. O. Ross Engineering Corp. *British Patent* No. 511,259 (August 15, 1939). Paper, e.g., that delivered from a paper-forming machine, is conditioned with moisture by subjecting said paper to a series of intermittent treatments by hot air at high humidity and, between treatments, reducing the temperature of the paper below the dew point of the hot air. Apparatus is described. (*Chemical Abstracts*, 34, No. 16, Aug. 20, 1940, pp. 5660-61.)

Spectrophotometry. E. M. Ludlam. *American Ink Maker*, 18, No. 9, Sept. 1940, pp. 47, 49, 51, 53. The spectrophotometric curve describes in relatively simple form the exact amount of each spectral color which the sample reflects. Two curves are necessary for each ink, one of the sample printed on a white base, and the other of the sample printed on a black base. The formation of the spectrum, the behavior of the eye in color vision, the interpretation of spectrophotometric data, and its application to color reproduction, are explained and illustrated. The effects of possible new methods of using colored inks and paper can be predetermined by this method without the exhaustive trials hitherto necessary.

Method of Drying Printing Inks. E. Kienle (to American Can Company). *U. S. Patent* No. 2,208,587. Method of drying printing inks containing partially polymerized china-wood oil, by exposing the printed surface to the vapors of an active catalyst such as stannic tetrachloride or titanic tetrachloride. (*Printing Equipment Engineer*, 60, No. 5, Aug. 1940, p. 36.)

Ortho Amylphenol—A New Anti-Skinning Agent. H. H. Nelson. *Paint Oil and Chemical Review*, 102, No. 20, Sept. 26, 1940, pp. 9-11. Ortho amylphenol was compared experimentally with four leading anti-skinning agents. Varnishes which form heavy skins in a short time, and an excess of cobalt drier, which greatly aggravates skinning problems under most conditions, were used. The tests showed that ortho amylphenol is an excellent anti-skinning agent and possesses the following advantages: (1) is free from characteristic odor, (2) does not delay drying time, (3) does not induce surface tack, (4) does not darken the varnish on aging, (5) is easily miscible with oils and resins, and (6) is readily available at low cost.

Equipment and Materials

Printing Roll. P. H. Durup (to Artographic, Inc) *U. S. Patent* 2,208,047. Printing roll for offset printing, particularly in the printing of envelopes, comprising a resilient body forming a smooth outer peripheral surface and provided with air passages for ventilation, and means for mounting on the printing roll (*Printing Equipment Engineer*, 60, No. 5, Aug. 1940, p. 38)

Offset Printing Machine. J. J. Ormond (to Artographic, Inc.) *U. S. Patent* No. 2,208,043. Offset printing machine wherein the use of holding or gripping members is eliminated and "bleeding-off" operation made possible. The machine is particularly adapted for handling and printing envelopes, cards, etc. (*Printing Equipment Engineer*, 60, No. 5, Aug. 1940, p. 38.)

General

Uniformity of Color on Offset Presses. C. R. Brooks. *American Pressman*, Apr. 24, 1940; *Review of Current Literature Relating to the Paint, Colour, Varnish and Allied Industries*, 13, 127, (1940). A discussion of the factors affecting uniformity of color. (*Chemical Abstracts*, 34, No. 18, Sept. 20, 1940, p. 6462.)

"Here's the CLUE to Good Lithography"

. . . says the Crescent Gink

No magic . . . no tricks to *quality* Lithography. Just good craftsmanship *and* good ink . . . Crescent Ink. Profit-wise Lithographers Call for Crescent for *every* job in the shop . . . they know that faithful Crescent reproduction sells for them as well as their clients. Remember, Crescent Inks cost you no more . . . do more for you!

CRESCENT INK AND COLOR CO.

WALTER CONLAN, President

464 N. Fifth Street Philadelphia, Pa.

It's Easy To Make Money With Vari-Typer

Compose copy for bulletins, sales manuals, booklets, catalogs, folders, etc. on the composing Type Writer . . with changeable faces and spaces. Any competent typist after proper instruction can Vari-Type your work to photo offset copy with large *savings and improved appearance.*

Write Today for new specimen portfolio "How to Make Money with Vari-Typer" . . . with actual samples issued by organizations in the lithographic field.

RALPH C. COXHEAD CORPORATION

Manufacturers of Vari-Typer

333 Sixth Avenue New York, N. Y.

John Stark Litho Chemical Supplies

LITHO "SUPER-LAC"

The Ace Plate Preservative

Made for smooth and easy application

1qt. can $2.75—Four 1qt. cans $8.00

"SUPER" PLATE DEVELOPING INK

1qt. can $2.00—Four 1qt. cans $6.00

For Deep Etch and Albumin Plates

JOHN STARK LABORATORIES

155 Granby Rd. So. Hadley Falls, Mass.

Agents. CANADIAN FINE COLOR CO.

240 Logan Ave. Toronto, Canada

We compliment the trade of modern lithographers for their achievements!

LET US PROVE OUR MERITS IN THIS FIELD

Contact Us For

LITHO EQUIPMENT and SUPPLIES

THE DOUTHITT CORPORATION

650 W. BALTIMORE AVE. DETROIT, MICH.

SAY *you saw it in MODERN LITHOGRAPHY!*

• That way your inquiry addressed to our advertisers will assure your obtaining the precise information . . . best suited to meet your specific needs.

DO YOU NEED HELP?

Former shop superintendent, thirty years' experience in the lithographic industry producing black and white and color work with film and wet plate camera paper, graining, stripping, albumen and deep etch plate-making, photo-composing, and presswork. Best of references—now making his experience and services available to solve difficulties in litho plants.

Competent to solve material problems, revise or install formulae and suggest suitable procedure.

GO ANYWHERE FOR SERVICE ON PER DIEM BASIS

Box 623

Offset Press Operation. C. W. Latham. MODERN LITHOGRAPHY, 8, No. 9, Sept. 1940, pp. 67, 83. True rolling contact, requiring synchronous speeds at point of contact between plate and blanket and between blanket and paper, can be obtained by manipulation of packing. Squeeze pressure, and the fact that the blanket surface is relatively soft complicate matters. Blanket creep causes a rubbing action between plate and blanket cylinders, which results in wearing of the plate, scumming, fanning, misregister, and other troubles. To overcome this rubbing, the plate and paper cylinders must be larger than the blanket cylinder. A method of determining the proper relative sizes to which the cylinders should be packed is described.

Photolitho Progress. J. S. Mertle. MODERN LITHOGRAPHY, 8, No. 9, Sept. 1940, pp. 32-4, 87. Recent developments and improvements in the following photolithographic equipment are reviewed: darkroom cameras, diaphragm controls, half-tone and variable opacity screens, image reversers, stayflat solutions, fluorescent lamps, color filters, densitometers, temperature control units, synthetic coating solutions, photocomposing machines, stainless steel and bi-metallic plates, and fluorescent inks. Masking methods of color correction, dot-etching on sensitized aluminum plates, and prevention of moire pattern are also discussed. New instruments of value to the graphic arts are the G. E. Totalux, the Eastman Color Temperature Meter, and the Lithographic Technical Foundation's Inkometer.

Decalcomanias. Part II. A. H. Reiser. *Printing Equipment Engineer*, 60, No. 6, Sept. 1940, pp. 28, 39-40. Decalcomanias to be transferred to china and pottery are lithographed direct from stone on special tissue paper in varnish and dusted with dry mineral colors. Some of the lighter colors are run as inks, no dusting being required. After being lithographed, the design is applied to the pottery surface and baked under intense heat. A highly skilled pressman is necessary; he must have a knowledge of the effect of heat on colors, must understand driers and drying action, and must be able to print in varnish and effect hairline register. Trouble is caused by the abrasive action of the dusted colors on both the image and non-image parts of the stone during subsequent printing. As the inks dry almost entirely by oxidation, long drying times result. Too strong a layer of varnish will fill in and cause a blurry design. Very little success has been attained in running ceramic decals by offset.

Miscellaneous

Printing Inks Utilizing the pH Value of Vehicles. Mac Sinclair. *Printing Equipment Engineer*, 60, No. 6, Sept. 1940, pp. 2, 46. A U. S. Patent allowed to Albert L. Lengel covers a process of producing an endless variety of colors by printing only two inks, one over the other, in various proportions. Dyes used as pH indicators are employed as color pigments, and the vehicles used in the two inks are acid and alkaline respectively. The process is especially applicable to newspaper work, using 60-line half-tone plates, but is said to be adaptable to offset or gravure, as well as letterpress printing. Red, orange, yellow, green, blue, and intermediate hues may be obtained.

The Lithographers Manual (Book). Compiled by W. E. Soderstrom. Waltwin Publishing Company, 1776 Broadway, New York, N. Y., 1940. $5.00. The manual contains a good selection of technical articles on both accepted lithographic methods and equipment, and new developments. Many useful formulas and tables and interesting illustrations are included. Good coverage of the lithographic field is achieved by this well arranged and neatly lithographed volume.

Lithography and The New World

(*from page 26*)

success obtained, or by coating the plate before it is run with some sort of a solution which will hold water, and so do away with the necessity of continually dampening the plate. I have had some success with a solution of this kind which contained glycerine, gelatine and ammonium dichromate. This was applied to the plate after the gum had been washed off with a water sponge while on the press, after it had been dried down. The press was started up in the usual manner, and after it had started the fountain solution was cut off. The plate stayed damp for about 5,000 sheets, after which it had to be dampened again. The results I obtained were not satisfactory as the glycerine seemed to grey the black ink, and the various lots of gelatine that I had obtained required different formulas each time.

Litho-Dopes

(*from page 28*)

and smoother for any lithographer. If lithographic pressmen will order their inks so that they require the least possible amount of adjusting for their work, and at the same time keep their ink inventories down, they can increase their press productiveness which after all is the yardstick of their worth to themselves and management. On the other hand, the ability to alter their inks quickly and surely as occasion demands also increases their productiveness and quality of work. A small stock of two or three varnishes, a drier or two, a good reliable compound and a good working color reducer, such as laketine or semi-transparent tint base, belong on any self-respecting lithographic ink shelf.

Coated Paper

(*from page 51*)

been beneficial and economical only because it was likely to prove less expensive than the humidity troubles that might occur during offset printing. Consequently, any process or method that is cheaper and more effective than the practice of hanging will permit lithographers to cut costs considerably.

If the lithographer will make arrangements with his paper maker for his paper to have a water content of about 5½% he will find that a great many of his troubles in regard to paper conditioning are eliminated.

New Carrier Catalog

Carrier Corp., Syracuse, N. Y., has just published an attractive two-color publication entitled "1294 Ways," describing the latest developments in air conditioning. In pamphlet form, the publication outlines the latest improvements in factory weather-making. The booklet is generously illustrated with Carrier Air Conditioning equipment. Copies are available.

"WHERE-TO-BUY-IT"

NOTE: This is a classified list of the companies which advertise regularly in MODERN LITHOGRAPHY. It will aid you in locating advertisements of equipment, materials or services in which you are particularly interested. Refer to the Advertiser's Index on page 65 for page numbers. *Say you saw it in Modern Lithography.*

Chemicals

Agfa-Ansco Corp.
Eastman Kodak Co.
Harris-Seybold-Potter Co.
Philip A. Hunt Co.
Litho Chemical & Supply Co.
Mallinckrodt Chemical Works
Merck & Co., Inc.
Norman-Willets Co.
Harold M. Pitman Co.
Senefelder Co., Inc.
J. H. & G. B. Siebold, Inc.
Sinclair and Valentine Co.
John Stark Laboratories

Graining and Regraining

(Zinc, Aluminum, Glass and Multilith Plates)
Fuchs & Lang Mfg. Co., Div. General Printing Corp.
International Printing Ink, Div. of Interchemical Corp.
Litho Plate Graining Co. of America, Inc.
Reliable Litho Plate Graining Co.
The Senefelder Co., Inc.
Litho Plate Grainers of Detroit
Standard Litho Graining Co.

Graining and Regraining Materials

International Printing Ink, Div. of Interchemical Corp.
The Senefelder Co., Inc.
J. H. & G. B. Siebold, Inc.

Inks—(Varnishes and Dryers)

California Ink Co., Inc.
Crescent Ink & Color Co. of Penna.
Martin Driscoll & Co.
Howard Flint Ink Co.
Fuchs & Lang Mfg. Co., Div. General Printing Ink Corp.
Gaetjens, Berger & Wirth, Inc.
International Printing Ink, Div. of Interchemical Corp.
E. J. Kelly Ink Co.
George H. Morrill Co., Div. General Printing Ink Corp.
F. G. Okie, Inc.
The Senefelder Co., Inc.
J. H. & G. B. Siebold, Inc.
Sinclair & Carroll Co.
Sinclair and Valentine Co.

Miscellaneous

Russell Ernest Baum (Folding Machinery)
Ralph C. Coxhead Corp. (Composing Machines)
Ben Day, Inc. (Shading Medium)
Dexter Folder Co. (Folding Machinery)
C. W. Latham (Consultant)
Leiman Bros., Inc. (Vacuum Pumps)
Underwood Elliott Fisher Co. (Typewriters)
U. S. Finishing & Mfg. Co. (Die Cutting & Finishers)
Jeffery White Studio (Color Service)

Paper

The Martin Cantine Co.
Chillicothe Paper Co.
Hammermill Paper Co.
Mid-States Gummed Paper Co.
The Mead Corp.
Strathmore Paper Co.
West Virginia Pulp & Paper Co.
Whiting-Plover Paper Co.

Photo Dry Plates and Films

Agfa Ansco Corp.
G. Cramer Dry Plate Co. (Photo Dry Plates)
Eastman Kodak Co.
Hammer Dry Plate & Film Co.
Norman-Willets Co.
Harold M. Pitman Co.

Plate Making Equipment & Supplies

Aluminum Co. of America (Aluminum Plates)
American Type Founders Sales Corp.
Artists Supply Co. (Opaque)
California Ink Co., Inc.
The Douthitt Corp.
Fuchs & Lang Mfg. Co., Div. General Printing Ink Corp.
C. P. Goerz American Optical Co. (Lenses)
Illinois Zinc Co. (Zinc Plates)
William Korn, Inc. (Litho Crayon and Litho Crayon Paper Pencil Mfrs.)
Lanston Monotype Machine Co.
Litho Equipment & Supply Co.
National Carbon Co., Inc. (Carbons)
Norman-Willets Co.
F. G. Okie, Inc. (Opaques—Developing Inks)
Ren R. Perry
Photo-Lith Sales
Harold M. Pitman Co.
Rutherford Machinery Co., Div. General Printing Ink Corp.
The Senefelder Co., Inc.
Simplex Specialty Co., Inc. (Film Dryers)
E. T. Sullebarger Co.

Plate Making Services

Graphic Arts Corp.
Modern Litho Plate Co.
Swart-Reichel, Inc.

Pressroom Equipment & Supplies

American Type Founders Sales Corp. (Presses—Offset Spray Gun, etc.)
Bingham Brothers Co. (Rollers, etc.)
Sam'l Bingham's Son Mfg. Co. (Rollers)
Fuchs & Lang Mfg. Co., Div. General Printing Ink Corp.
Godfrey Roller Co. (Dampening Rollers)
Harris-Seybold-Potter Co. (Presses)
Ideal Roller & Mfg. Co. (Rollers)
International Press Cleaners & Mfg. Co. (Press Cleaner)
International Printing Ink, Div. of Interchemical Corp.
Kimble Electric Co. (Motors)
Harold M. Pitman Co.
Rapid Roller Co. (Rollers and Blankets)
The Rathbun & Bird Co., Inc. (Machinists)
Roberts & Porter, Inc.
Rutherford Machinery Co., Div. General Printing Ink Corp.
The Senefelder Co., Inc.
J. H. & G. B. Siebold, Inc.
Sinclair and Valentine Co. (Blankets)
Steelitho Plate Corp. (Blanket Cleaner, Steel Plates, etc.)
E. T. Sullebarger Co.
W. A. Taylor & Co., Inc. (pH Control for Fountain Solutions)
Vulcan Proofing Co. (Rollers and Blankets)

CLASSIFIED

All classified advertisements will be charged for at the rate of ten cents per word. $2.00 minimum, except those of individuals seeking employment, where the rate is five cents per word, $1.00 minimum. Address all replies to Classified Advertisements with Box Number, care of Modern Lithography, 254 W. 31st St., New York. **Closing date: 1st of month.**

Help Wanted:

Man, 25-35, with general lithographic experience, including production control, for supervisor position with middle-west litho company. State full experience, age, married or single, references and salary requirements. Replies held confidential. Address Box #619.

•

Do You Need—

An experienced Harris or Potter offset pressman, two-color or single? Fast production with quality. Must be steady work. References. Address Box #620.

•

Situation Wanted:

Competent young photographer, experienced in line, halftone. Some knowledge of platemaking and stripping. Six years with New York firm. Go anywhere in U. S. Address Box #621.

•

Offset Salesman Wanted:

Large offset plant doing color work and black and white, seeking high grade, aggressive salesman with a following. Drawing account against commission. Address Box #622.

•

Wanted:

Artist and camera man experienced in design of letterheads and business forms, general experience in photo-composing, plate-making desirable but not necessary. Write stating detailed qualifications, experience, salary expected, to Box #624.

•

Position Wanted:

Qualified photographer for wet plate and film halftones. Also color process separation work. Experienced in platemaking. Can help in stripping. Married. Age 32. Will go anywhere. Write Box #625.

•

General Information Concerning Inventions and Patents:

A reference book for inventors and manufacturers, also containing sections on the registration of trademarks and copyrights, and a "Schedule of Government and Attorneys' Fees"—sent free on request. Simply ask for "booklet" and "fee schedule." Lancaster, Allwine & Rommel, Registered, Patent and Trade-Mark Attorneys, 402 Bowen Building, Washington, D. C.

•

A. T. F. Profits Up

A net profit of $42,825.00 for the second quarter of the current fiscal year, ended September 30, is reported by Thomas Roy Jones, president of American Type Founders, Inc. This compares with a profit of $29,505.80 for the corresponding period a year ago. Mr. Jones further announces the closing by the company of a substantial contract for ordinance materials. Deliveries under this contract will commence in approximately six months. An addition to the company's plant in Elizabeth, N. J., is now under construction.

•

Litho Salesman Dies

Henry A. Bowman, 59, former salesman for over twenty years for Donaldson Lithographing Co., Newport, Ky., died last month at his home in Mt. Vernon, N. Y. For the past six years he had been national sales manager for the New York Branch of General Outdoor Advertising, Inc.

•

Jones Reelected

Thomas Roy Jones, president of American Type Founders, Inc., was again elected president of the National Printing Equipment Association at its seventh annual meeting at the Mayflower Hotel, Washington, last mont .. The other officers of the association were likewise re-elected for an additional term of one year. These include: vice-president, R. V. Mitchell, president, Harris-Seybold-Potter Company, Cleveland; treasurer, James S. Gilbert, chairman, Dexter Folder Company, Pearl River, N. Y.; and secretary, James E. Bennet, 38 Park Row, New York.

•

New Agfa Film Manual

Agfa Ansco, Binghamton, N. Y., has just published "Agfa Graphic Film Manual," which describes the manufacture of photographic film for the graphic arts industry. The photographic characteristics of film are taken up in detail and the differences between different types of film with respect to color sensitivity and density separation are shown graphically. Hints are given for improving methods of photographing copy, exposing the film, and proper developing. Uncertain results and make-overs, it is pointed out, are generally caused by a lack of developer temperature control. A series of processing formulas recommended for Agfa Reprolith films round out the 24-page manual. Copies are available.

•

Goes to Camp

Mobilization of Chicago's 202nd Coast Artillery for training at El Paso, Tex., caused Robert H. Heidersbach, sales executive with Buckley, Dement & Co., to abandon business for military duty. Mr. Heidersbach, who is a lieutenant in the unit, is believed to be the first individual in Chicago lithographic circles to answer the call to the colors.

•

Baker Expands

Baker Reproduction Co., Chicago, offset plate makers, recently installed equipment to take care of increased work. Included in the new equipment is a 31" Robertson camera with a 29" circular screen.

•

Challenges Lithos

Chicago Federated Advertising Club has invited Chicago lithographers and other representatives of the graphic arts to enroll teams in an inter-city bowling tournament tentatively scheduled for next April. A. H. Frisch of *Advertising Age*, heads the organizing committee.

•

Opens Carbro Print Service

Jack Ward, formerly with Henry Waxman, New York, has opened a carbro print service at 14 East 47th Street, in New York.

"ASCO"
(RED)
OPAQUE
BLOCKS OUT WITH A SINGLE STROKE
Exceptional opacity permits close contact with print.

Ground extremely fine. Flows freely from brush, pen or airbrush. Leaves a thin smooth film that will not crack or chip off.
Test it yourself — Send for a sample.

ARTISTS SUPPLY COMPANY
7610 Decker Ave. Cleveland, Ohio
Ask your dealer for "Asco"

for better letterhead business

STRATHMORE

letterhead papers

THE RATHBUN & BIRD CO., Inc.

IN BUSINESS SINCE 1898

MACHINISTS

For LITHOGRAPHERS — PRINTERS

PLANTS MOVED REPAIR SERVICE
MACHINES RE-CONDITIONED

85 GRAND STREET NEW YORK, N. Y.
Telephone: CAnal 6-4145-4146

We Cover the West Coast

If you are west of Chicago we can help you keep the wheels moving (and the profits rolling in) by supplying you quickly with dependable equipment, photo supplies and chemicals from one of our six completely stocked offices.

HEADQUARTERS ON THE WEST COAST FOR { EQUIPMENT, PHOTO SUPPLIES, CHEMICALS

Your phone will bring a representative — quickly!

PHOTO PROCESS DEPARTMENT

THE CALIFORNIA INK CO., Inc.

SAN FRANCISCO LOS ANGELES PORTLAND SEATTLE
SALT LAKE CITY SHANGHAI, CHINA

FREE TRIAL OFFER

SUPREME OFFSET BLACK

That's just what we mean — a chance to find out why hundreds prefer Supreme Offset Black. It's a clean working, hard drying rich black with an absolute minimum of "greasing" on the plate.

Write for information on our
FREE TRIAL OFFER

E. J. KELLY COMPANY
1829 N. Pitcher St. Kalamazoo, Mich.

KORN'S

LITHOGRAPHIC	CRAYONS
"	CRAYON PAPER PENCILS
"	STICK TUSCHE
"	LIQUID TUSCHE
"	RUBBING INK
"	TRANSFER INK
AUTOGRAPHIC	TRANSFER INK
MUSIC - PLATE	TRANSFER INK

Manufactured by

WM. KORN, INC.

260 WEST STREET NEW YORK

New SALES TOOL

FREE FOR PRINTERS
Just paste this ad on your letterhead or write for FREE copy of the new —

MID-STATES LABEL DESIGN SEE-LEC-TOR

MID-STATES GUMMED PAPER CO.

2515 S. Damen Ave., Chicago
New York Cleveland St. Louis San Francisco

3 "MUSTS" in PLATE GRAINING

TOP QUALITY WORK
DEPENDABLE SERVICE
FAIR PRICES

Make sure of getting all three by letting us handle your next graining job. A trial order will convince you.

LITHO PLATE GRAINERS of DETROIT, Inc.

1241 TENTH ST. DETROIT, MICH.

A Complete Graining Service for the Trade

Latham to Repeat Course

The Lithographic Technical Foundation, New York, announces a course in the science of pressroom procedures, to be conducted by C. W. Latham, pressroom consultant, beginning November 18, 1940, at room #1910 at the Daily News Building, in that city. The course is suggested for factory superintendents, pressroom foremen and production control men. Tuition for the entire course, which consists of nine weekly lessons, is $12.00. The course by Mr. Latham, conductor of the monthly column "Offset Press Operation" appearing in MODERN LITHOGRAPHY, was initiated by the Lithographic Technical Foundation last year. It proved to be one of the most popular courses offered by that organization. Among the subjects to be discussed by Mr. Latham during the nine weeks course are press adjustments; rollers and blankets; packing calculations; pressure; plates and graining; photo-mechanical plates; inks; paper and air conditioning. Those interested in enrolling are requested to write Dr. D. J. MacDonald, educational director, Lithographic Technical Foundation, 220 East 42nd Street, New York City.

•

New Ad Production Book

Of the many books which have been written on advertising production, the latest entitled, "The Technique of Advertising Production," by Thomas Blaine Stanley, professor of marketing, New York University, is far and away one of the best. It presents a simple yet complete and searching analysis of the subject. Avoiding the usual tendency to separate into water-tight compartments the various branches of advertising, the author has treated the several divisions and aspects of advertising production as related and intertwined matters. No phase of production is ignored in this work or dismissed as merely mechanical and subordinate. The problems of layout, typography, photo-engraving, paper, printing, illustration, lithography and color which are ordinarily treated in separate volumes are here combined in one coherent whole. Many agencies collaborated with the author in making the new work authoritative. The publisher is Prentice-Hall, Inc., New York; 8½ x 11½; 216 pages. Price $5.00.

ADVERTISERS' INDEX

NOVEMBER, 1940

For Product Classification See Page 62

Agfa Ansco Corp. ..... 3rd Cover
Aluminum Co. of America ..... Sept.
American Type Founders ..... 6 and 16
Artists Supply Co. 64

Baum, Russell Ernest ..... Oct.
Bingham Brothers Co., Inc. ..... Sept.
Bingham's Sam'l, Son Mfg. Co. 9

California Ink Co., Inc. 64
Cantine, Martin, Co., The 58
Chillicothe Paper Co. 42
Classified Advertising 63
Coxhead, Ralph C., Corp. 60
Cramer, G., Dry Plate Co. 54
Crescent Ink & Color Co. of Penna. 60

Day, Ben, Inc. 56
Dexter Folder Co. 44
Douthitt Corporation, The 60
Driscoll, Martin, Co. 56

Eastern Lithographers Assn. 46
Eastman Kodak Co. 41

Fuchs & Lang Mfg. Co., Div. General Ptg. Ink Corp. ..... Bet. 10-11

Gaetjens, Berger & Wirth, Inc. 42
Godfrey Roller Company ..... Oct.
Goerz, C. P., American Optical Co. 56
Graphic Arts Corp. ..... Sept.

Hammer Dry Plate & Film Co. ..... Sept.
Hammermill Paper Co. 3
Harris-Seybold-Potter Co. ..... 4th Cover
Hunt, Philip A., Co. 50

Ideal Roller & Mfg. Co. 17
Illinois Zinc Co. 58
International Press Cleaner & Mfg. Co. 52
International Printing Ink, Div. of Interchemical Corp. ..... Oct.

Kelly, E. J., Ink Co. 64
Kimble Electric Co. ..... Oct.
Korn, William, Inc. 64

Lanston Monotype Machine Co. 10
Latham, C. W. 54
Leiman Bros., Inc. ..... Oct.
Litho Chemical & Supply Co. 44
Litho Equipment & Supply Co. ..... Oct.
Litho Plate Grainers of Detroit 64
Lithographic Plate Graining Co. of America, Inc. 48

Mallinckrodt Chemical Works ..... Oct.
Mead Corp., The ..... Oct.
Merck & Co., Inc. 13
Mid-States Gummed Paper Co. 64
Modern Litho Plate Co. ..... Oct.
Morrill, George H., Co., Div. General Printing Ink Corp. 50

National Carbon Company, Inc. (Carbon Sales Division) 16
Norman Willets Co. 58

Okie, F. G., Inc. 52

Perry, Ren R., Inc. ..... Sept.
Photo-Lith Sales ..... Oct.
Pitman, Harold M., Co. ..... Oct.

Rapid Roller Co. 11
Rathbun & Bird Co., Inc., The 64
Reliable Lithographic Plate Co. 52
Roberts & Porter, Inc. 15
Rutherford Machinery Co., Div. General Printing Ink Corp. 8

Senefelder Co., Inc. ..... 2nd Cover and 4
Siebold, J. H. & G. B., Inc. 46
Simplex Specialty Co., Inc. ..... Oct.
Sinclair & Carroll Co. 48
Sinclair and Valentine Co. 7
Standard Litho Graining Co. 54
Stark, John, Laboratories 60
Steelitho Plate Corp. ..... Oct.
Strathmore Paper Co. 64
Sullebarger, E. T., Co. 54
Swart-Reichel, Inc. ..... Sept.

Taylor, W. A., & Co., Inc. ..... Oct.

Underwood Elliott Fisher Co. ..... Sept.
U. S. Finishing & Mfg. Co. 58

Vulcan Proofing Co. ..... Oct.

West Virginia Pulp & Paper Co. ..... Oct.
"Where-to-Buy-It" 62
White, Jeffery, Studio ..... Oct.
Whiting-Plover Paper Co. 18

(The Advertisers' Index has been carefully checked but no responsibility can be assumed for any omission.)

"Go ahead, Cuthbert, he can't hurt us!"

. . . Unprepared!

DO you send your salesmen out unprepared to crack tough nuts among the buyers . . . to attempt a selling job which you would not attempt yourself? Or do you make your firm and your goods well-known in advance among these tough buyers by consistent and regular advertising in representative trade papers . . . to pave the way for your salesmen?

Give a thought to 1941 . . . to preparing the way for your salesmen to sell more of your goods to the lithographic industry by regular advertising in . . .

MODERN LITHOGRAPHY

254 West 31st Street New York, N. Y.

Tale Ends

NEW YORK CITY'S attempted grabfest at the expense of the display lithographer by levying a tax on displays has been neatly nipped by sharp-tongued Mayor F. H. La Guardia, who told officials regarding enforcement of the occupancy tax law: "Do not make this law irksome or annoying." Somebody ought to have that framed and sent to every legislature in the country. An especially big one should be sent to the Mayor.

* * *

There's a new edition of *Linde Lines* (Vol. 2, No. 2) just off the press. Get a copy. It came in too late for a detailed review in this issue, but get a copy. This smartly-edited and designed idea-chest for lithographers and printers, published by Linde Paper Company under the editorial direction of Charlie Morris and Chuck Edwards, gets better *and better!* Elvira Norton (address unknown) should be mentioned, too. Oomph!

* * *

We're glad to hear that "Living Lithography" has gone on tour. Sponsored by the American Institute of Graphic Arts, the exhibit will visit the principal cities. Why not get an old steam calliope decorated with some of those old lithographed circus posters to herald its approach and play outside the exhibition hall at each port-of-call on opening nights?

* * *

The annual awards for the best outdoor advertising designs have been given (see page 40), with lithographed 24-sheets copping the first three, and not one bears the likeness of a beautiful blonde with teeth. Copy that in your copybook when you get out that next direct-mail piece. Ideas sell, too.

* * *

Did you know that you can get a copy of the Lithographer's Manual, together with a subscription to MODERN LITHOGRAPHY at a bargain rate? There's an announcement elsewhere in this issue which gives all the details. Better look it up!

Stake Your Claim On Quality...

Prospecting for better results? Here's your lead to excellence: Use REPROLITH--the dependable film for camera and contact exposures. It brings you these great features:

1. **Maximum contrast**
2. **Greatest resolving power**
3. **Extra latitude in development**
4. **Anti-halation coating**
5. **Safety base**

REPROLITH FILM

REGULAR AND THIN-BASE

Agfa

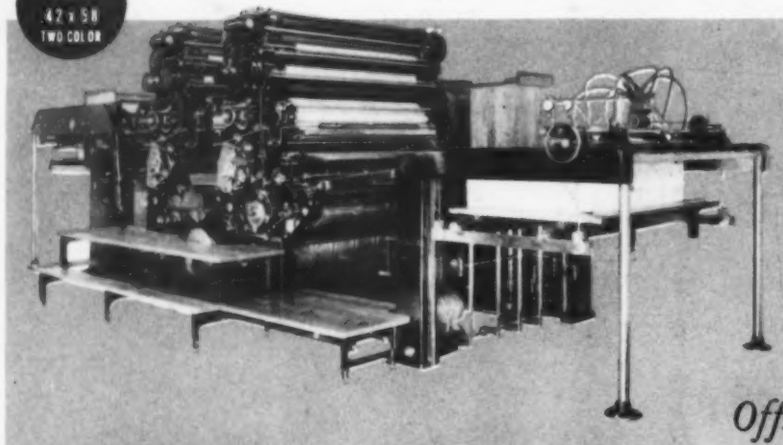
FOR BEST RESULTS USE BEST MATERIALS

AGFA ANSCO · BINGHAMTON, N.Y. MADE IN U.S.A.

Follow THE COURSE AND CURRENT OF PROFITS—SET YOUR "SALES" WITH THE PREVAILING WIND . . .

The current of opinion is more and more to Offset. The prevailing tendency is toward the more distinctive results created by this modern method—the type of results that provide more colorful effects, give a real force and create wider acceptance.

The press of modern business—the Harris—is the press for creating modern Offset results. Harris presses are made by the pioneer builder of successful Offset presses in every size for every Offset requirement.



★ LITHO CHEMICALS

Through research, Harris has developed and standardized new chemicals for both deep etch and surface plate making processes. Full details upon request. Write us with reference to your lithographic problems.

Offset is the Modern Method!

HARRIS OFFSET PRESSES

·HARRIS·SEYBOLD·POTTER·COMPANY·

PIONEER BUILDERS OF SUCCESSFUL OFFSET PRESSES

General Offices: 4510 East 71st St., Cleveland, Ohio • *Harris Sales Offices:* New York, 330 West 42nd St. • Chicago, 343 So. Dearborn St. • Dayton, 819 Washington St. • Atlanta, 120 Spring St., N.W. • San Francisco, 420 Market St. • Harris-Seybold-Potter (Canada) Ltd., Toronto, Montreal • *Factories:* Cleveland, Dayton